# NEG – Cognitive Biotechnology – CPWW 2022 – Michigan Summer Debate Institutes

## Notes

#### Thank you to Devin S, Rohan L, Roan M, Suditi C, Saturn G, Seiji A, Gideon W, and William A for all of their hard work on these files

#### Email [walratca@umich.edu](mailto:walratca@umich.edu) with any concerns

# Case Answers

## Case – Solvency

### 1NC – DOD Fails

#### The DoD encounters too many regulatory and funding burdens to effectively develop cognitive biotechnology.

**DoD 15** (DoD Research and Engineering, Office of the Assistant Secretary of Defense for Research and Engineering, Office of Technical Intelligence, "Technical Assessment: Synethic Biology", January 15, https://defenseinnovationmarketplace.dtic.mil/wp-content/uploads/2018/02/OTI-SyntheticBiologyTechnicalAssessment.pdf, xx-xx-xxxx, Accessed 6-26-2022)//ILake-SG

4. Medical & Human Performance Modification DoD’s medical needs are mostly consistent with broader, civilian needs, albeit concentrated more in certain areas, such as trauma. At the same time, the National Institutes of Health (NIH) dwarfs DoD’s biomedical research budget; the private sector is also investing in this area, and both the private sector and NIH are in a substantially better position to support novel therapeutics through the regulatory system. Because of the novelty of synthetic biology and the extra regulation required when using viable organisms in medical treatments, the regulatory burden will probably be even heavier than for existing treatments when using live organisms. DoD has unique human performance applications, and the private sector is only investing in a limited way through relevant medical R&D. In the same way, medical funding is generating some relevant R&D at NIH and in other basic research organizations, but it is usually not targeted at human performance. This field has what is probably the largest regulatory challenge, especially when contemplating DoD research in this area. Where enhancement is concerned, the FDA does not currently have a mechanism for approving new ‘treatments,’ as it requires them to treat a disease to be considered, and research in military populations has additional hurdles. Assessment: At present, resources should primarily be directed elsewhere, with some exceptions in the human performance field, which represents a major opportunity for DoD and would substantially benefit from R&D investment; however, the regulatory hurdles and potential communications challenges from the interaction between synthetic biology and human performance suggest that it is too early for DoD to move into this area unless DoD can identify civilian medical researchers as early partners who will carry developments through testing and regulatory approval. Research should also focus away from modifying the human genome and instead work on areas such as synthetic probiotics.

### 1NC – No Russia Cog Biotech

#### Russia is not a threat until 2035 at the earliest – a lacking economy, no protections, and a technical exodus ruins its R&D capacity

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Russian President Vladimir Putin has explicitly stated intent to implement an aggressive modernization plan via the National Technology Initiative (NTI). Designed to grant an overmatch advantage in both commercial and military domains against Russia’s current and near-term future key competitors, the NTI has been viewed as somewhat hampered by the nation’s legacy of government control, unchanging economic complexity, bureaucratic inefficiency and overall lack of transparency. However, there are apparent disparities between such assessment of the NTI and its capabilities, and Russia’s continued invention and successful deployment of advanced technologies. Unlike the overt claims and predictions made by China’s scientific and political communities about the development and exercise of neuroS/T to re-balance global power, explication and demonstration(s) of Russian efforts in neuroS/T tend to be subtle, and detailed information about surveillance and extent of such enterprise and activity is, for the most part, restricted to the classified domain. In general, Russian endeavors in this space tend to build upon prior work conducted under the Soviet Union, and while not broad in focus, have gained relative sophistication and capability in particular areas that have high applicability in non-kinetic disruptive engagements. Russia’s employments of weaponized information, and neurotropic agents have remained rather low-key, if not clandestine (and perhaps covert), often entail nation-state or non-state actors as proxies, and are veiled by a successful misinformation campaign to prevent accurate assessment of their existing and developing science and technologies. Military science and technology efforts of the USSR were advanced and sustained primarily due to the extensive military-industrial complex which, by the mid-1970s through 1980s, is estimated to have employed up to twenty percent of the workforce. This enabled the USSR to become a world leader in science and technology, ranked by the U.S. research community as second in the world for clandestine S&T programs (only because the overall Soviet system of research and development (R&D) was exceptionally inefficient, even within the military sector). The collapse of the USSR ended the Soviet military-industrial complex, which resulted in significant decreases in overall spending and state support for R&D programs. Any newly implemented reforms of the post-Soviet state were relatively modest, generating suboptimal R&D results at best. During this time, Russian R&D declined by approximately 60% and aside from the Ministries’ involvement with the military sector, there was a paucity of direct cooperation between Russian R&D institutions and operational S&T enterprises. This limited interaction, was further compounded by a lack of resources, inability to bring new technology to markets, absent protections for intellectual property, and “brain drain” exodus of talented researchers to nations with more modern, cutting-edged programs with better pay and opportunities for advancement. Recognizing the inherent problems with the monoculture of the Russian economic and S&T ecosystems, the Putin government initiated a process of steering Russia toward more lucrative, high-tech enterprises. The NTI is ambitious, with goals to fully realize a series of S&T/R&D advancements by 2035. The central objective of the NTI is establish “the program for creation of fundamentally new markets and the creation of conditions for global technological leadership of Russia by 2035.” To this end, NTI Experts and the Agency for Strategic Initiatives (ASI) identified nine emerging high-tech markets for prime focus and penetrance, including neuroscience and technology (i.e., what the ASI termed “NeuroNet”). Substantive investment in this market is aimed at overcoming the post-Soviet “resource curse”, by capitalizing on the changes in global technology markets – and engagement sectors – to expand both economic and military/ intelligence priorities and capabilities. According to the ASI, NeuroNet is focused upon “distributed artificial elements of consciousness and mentality”, with Russia’s prioritization of neuroS/T being a key factor operative in influence operations directed and global economies and power. Non-kinetic operations represent the most viable intersection and exercise of these commercial, military, and political priorities, capabilities, and foci of global influence and effect(s).

### 1NC – No Solvency

#### Technical hurdles deck solvency

**Vahle 20** (Mark Vahle, Major, USAF. AIR UNIVERSITY AIR COMMAND AND STAFF COLLEGE, "OPPORTUNITIES ANDIMPLICATIONS OF BRAIN-COMPUTER INTERFACE TECHNOLOGY", 1/7/2020, https://www.airuniversity.af.edu/Portals/10/AUPress/Papers/WF\_0075\_VAHLE\_OPPORTUNITIES\_AND\_IMPLICATIONS\_OF\_BRAIN\_COMPUTER\_INTERFACE\_TECHNOLOGY.PDF, accessed on 7/2/2022)//gideon

Before projecting where BCI technology may be in coming years and forecasting what is or is not possible, it is essential to understand the technical challenges involved. These technical challenges are not trivial and may significantly alter how the DOD and USAF use technology to enhance our war fighters. First, faulty metaphors and Hollywood hype have influenced our perception of the brain—an actual, complete understanding of the brain and its functions might still be decades away. Second, the body’s immune system responds when subject to a foreign object. Third, achieving high signal resolution—while also ensuring safety with invasive methods—yields engineering challenges, including issues with power consumption, biosecurity, communications methods (wireless or wired), and decoder efficiency. Finally, ethical, social, and legal implications arise with BCI implants. These challenges, while not an all-encompassing list, represent the obstacles that will guide how the USAF and DOD apply these technologies in future efforts. The first challenge highlights how far we have to go to gain a complete understanding of the brain. In the last decade, genetic sequencing technology and new tools for mapping the brain have led to an explosion in neuroscience research. Scientists can now use these tools to map neuronal firing patterns in an attempt to understand how different firing patterns lead to different actions. However, the brain contains between 80 and 100 billion neurons with each neuron having up to 10,000 connections to its surrounding neurons.25 Scientists are still far from understanding the dynamics of the electrochemical interactions between the neurons and how those interactions are translated into memories, behaviors, perceptions, and actions. Often we seek the closest metaphor for the brain, comparing the brain to a digital computer and its subcomponents. While similarities exist (both are designed to process and store information), mechanisms for their processes and are quite different. In reality, when exposed to new experiences, the brain changes in an orderly way based on the existing, unique structure that each person has developed over a lifetime of experiences. Robert Epstein’s article, “The Empty Brain,” states there is no reason to believe that any two of us are changed the same way by the same experience.”26 For example, the firing patterns on the brains of two air battle managers (ABM) learning the same task would be dependent on their past experiences. This complicates the prospect of accurate memory prosthesis or the transferring of knowledge and experience from one person to another. The brain does indeed have a modular design, with certain areas designed for specific functions (i.e., movement planning, movement execution, aggression, attention, and so forth). This indicates that although the brain activity of the two ABMs will not be identical, they will likely be similar. There may be a quasi-transitive property within the brain like in mathematics (i.e., 5 x 6 = 6 x 5), where neurons are arranged differently but retain the same data. The first step in making an informed prediction about the future of BCIs is to temper our expectations. This can be accomplished by taking some time to understand what metaphors are valid and invalid depending on what is being compared. The second challenge to BCIs is the body’s natural immune response when subject to a foreign body. This is particularly important for invasive BCIs that reside under the skin. Invasive BCIs typically use an array of micro-electrodes in direct contact with specific neurons in the brain. Once the body recognizes the electrode as a foreign body, the immune system goes to work much like it would in the case of a splinter. The result is a process called tissue encapsulation, in which the electrode is surrounded by a fibrous capsule of tissue called a glial scar. The Journal of Neuroscience Methods article states the scar’s purpose is believed to be separating “damaged neural tissue from the rest of the body to maintain the blood-brain barrier.”27 This capsule reduces the signalrecording ability of the electrodes and sometimes results in the death of the particular neuron, to the point where some BCIs become unusable after a few weeks. Worth noting are many research efforts attempting to solve the biocompatibility problem with tissue-response modifying drugs and advanced material coatings like hydrogels (which mimic soft body tissue).28 However, bodily response represents the most significant challenge to achieving a chronic or long-term BCI in clinical patients. Today’s BCIs are limited to clinical studies under the close care of physicians. The physicians have to not only work fast to gather data as the encapsulation takes place but also strictly monitor the patient for a brain infection. Until the biocompatibility of medical devices is improved, this challenge will likely limit the use of invasive BCIs to clinical populations for the next decade. Therefore, this pushes DOD and USAF near- and medium-term applications toward noninvasive methods. The third challenge facing BCIs is overcoming engineering hurdles to achieve high signal resolution while also ensuring safety with invasive methods. The goal with any BCI is to produce a bidirectional communication with the brain. Often this is done via electrodes interfacing directly with neurons. The objective is to achieve high spatial and temporal resolution with the measurements. This means knowledge of where and when the measurement happened. The more electrodes that interface with the neurons, the higher the amount of data the researcher receives. Three research areas categorize BCIs today. The first is the insertion of an electrode that measures (or excites) a single neuron. Electrode methods are invasive, requiring an operation below the protective layer of skin that surrounds and protects the brain. Electrodes are subject to tissue encapsulation and infection. The second method involves taking measurements from the scalp using electroencephalographic (EEG) activity.29 EEG methods are noninvasive but are typically characterized by low spatial and temporal resolution. The third method measures electrocorticographic (ECoG) activity from the surface of the brain rather than from inserting electrodes. An ECoG-mesh would likely measure populations of neurons firing. This method is also invasive but provides much higher measurement resolution than EEG methods. Additionally, ECoG methods are useful for avoiding some of the body’s immune responses that create limitations for electrode methods. In addition to resolution and safety, BCI engineering challenges also exist in power consumption, biosecurity, communications methods (wireless or wired), and decoder efficiency. Power consumption and biosecurity are fields that sometimes directly compete with each other. Typically medical devices strive for low-power consumption to reduce battery size and prolong device lifespan. However, there is an inverse relationship between power requirements and efficient biosecurity measures, as protecting signals through encryption increases required computations, driving the power consumption up. Wireless communication methods are preferred over wired to reduce the chance of infection; however, they have their range limitations as the body is an excellent absorber of electromagnetic radiation. Decoders are also a significant engineering challenge, designed to accomplish the analyze and translate function of a BCI. This is because the brain is inherently plastic, meaning it can modify its structure and rewire itself as we age. As a result, the ability of a decoder to decipher the intent of neuronal firing patterns will degrade as the brain rewires.30 The decoder needs to be able to understand and adapt to changes in the brain for the translate function to work correctly. Otherwise, the decoder would need to be retrained. These challenges are likely to be overcome as new methods for low-power biosecurity and decoding brain signals are developed. Additionally, advances in big data analytics and AI will help assist bringing BCIs closer to reality. The fourth challenge involves consideration of the ethical, legal, and social implications (ELSI) of BCIs, which serves to slow the growth of this technology. The ELSI process began as a research program in the 1990s because of the HGP.31 The goal is to have an independent assessment of the implications surrounding research. That way, we may venture into the gray areas of acceptability, whether ethically, socially, or legally. DARPA utilizes ELSI experts to help “proactively identify potential issues related to the use of neurotechnology.”32 These experts supplement the already cumbersome process provided by institutional review boards (IRB). For the USAF, the review is accomplished by the 711th Human Performance Wing’s IRB out of Wright-Patterson AFB, Ohio. Their mission is to “facilitate excellence in human performance and technological research that advances war-fighting capabilities . . . by efficiently processing and professionally evaluating proposals for scientific validity and uncompromising protection of the rights and welfare of volunteer subjects.”33 Most would agree that the incorporation of a BCI to cure disease, treat brain injury, or regain use of a lost limb are altruistic efforts without ELSI concerns. These additional levels of review, though necessary, serve to slow the development of BCIs and may ultimately limit their applications when applied to healthy individuals. The four challenges presented here represent hurdles that may slow, stop, or divert this technology into something completely different than expected. These hurdles also drive uncertainty in the prediction of where this technology will be in the next five, 10, or 20 years. Concerning the misconceptions surrounding the brain and our biases created by Hollywood or brain-computer metaphors, efforts need to be taken to inform decision makers what is within the realm of possibilities regarding BCIs.

#### No solvency - neurobiohackers ignore regulations and are beyond NATO’s scope

**Giordano 21** (James Giordano, PhD, MPhil, is Professor in the Departments of Neurology and Biochemistry; Chief of the Neuroethics Studies Program; Director of the Cyber-SMART Center’s Program in Biotechnology, Biosecurity and Ethics; Co-director of the Program in Brain Science and Global Law and Policy; and Chair of the Subprogram in Military Medical Ethics at Georgetown University. "Emerging Neuroscience and Technology (NeuroS/T): Currentand Near-Term Risks and Threats to NATO Biosecurity", 3/2021, https://www.innovationhub-act.org/sites/default/files/2021-03/NATO%20NeuroST%20Report%20FINAL.pdf, accessed on 7/2/2022)//gideon

There is also a growing do-it-yourself (DIY)/ biohacking community that is dedicated to modifying commercially available DTC products to perform different functions, and/or creating new products capable of affecting neurobiological functions. Biohacking typically implies modifications for benevolent ends (i.e., “white-hat” hacking), inclusive of development of agents and devices to improve human cognition, emotion, and behavioral performance. However, there is also a “black-hat” hacking community that engages DIY approaches to modifying neurobiology to produce pathogens, or to incur other disruptions in individual or community stability and safety. Biohacking can be articulated in three research domains: synthetic biology (e.g., genetic and molecular editing); biotechnology (human-machine interfaces, technological implants, and prosthetics); and biochemistry (e.g., development of neurotropic agents that can be used either singularly or in chemical cocktails). These categories and their products are not mutually exclusive. DIY scientists/biohackers often work in coordination within an informally organized community, and much of their research is made publicly available through open access databases and websites of community laboratories. The spirit of the DIY/biohacking community reflects a movement to make biology “easier to engineer”, and more publicly accessible and available. In part, this is constituent to an expanding trend toward “open source” biology that has influenced both research institutions and the public. Additionally, “open source” biology has captured an economic market niche: engineered and modified organisms, drugs, and devices can be sold; community laboratories can be purchased (by conventional commercial entities); and both community laboratories and individual DIY biohackers can be subsidized through venture capital. With manuals and methods available online, it is relatively easy to establish and run a laboratory, and interested individuals and groups can obtain guidance on producing and/or manipulating a variety of neurobiological techniques and technologies. These same opportunities also pose potential regulatory, health, and security risks. Independent laboratories and researchers do not always abide by the comprehensive policies that academic and industrial research entities must follow. As well, there is increasing use of the “dark web” (covertly accessed Internet) by both “white-hat” and “black-hat” biohackers to facilitate exchange of information in ways that impede surveillance. This community presents particular dual-use research concerns in that: 1. outcomes and products may be used or misused in ways that adversely impact individual and public health and safety, as well as the integrity of flora and fauna in the environment; 2. limitations and/or lassitude in research practices and/or laboratory conditions may incur accidental release of information or products that can pose health and environmental risks and harms; and/or 3. activities may be subsidized and outcomes and products utilized by national and non-state venture capitalists with explicit intent toward disrupting public safety, stability, and health. These possibilities evoke security concerns on local, national, and international scales, and have warranted involvement of crime prevention and public safety agencies (e.g., the United States Federal Bureau of Investigation) to establish dialogue with, and insight to the DIY biohacking community. What is important to note is that neuroscientific and neurotechnological research and development is occurring on a variety of levels (from large scale academic and industrial laboratories to individual DIY experimenters) and is international. In this latter regard, it has been estimated that a significant and growing percentage of neuroscientific and technical research and development will be engaged outside of the West by 2025. This increases the possibility for dual-use research and DURC, and generates questions about what constitutes research for security purposes (i.e., preparatory defense) versus military/warfare (i.e., offensive capability) purposes.

### 1NC – Not Inevitable

#### Cognitive biotech is not inevitable

**Breedlove and Kosal 19** (Phillip Breedlove and Margaret Kosal, a retired four-star general in the United States Air Force who served as the commander of U.S. European Command, as well as the 17th Supreme Allied Commander Europe of NATO Allied Command Operations, Associate Professor in the Sam Nunn School of International Affairs at Georgia Institute of Technology, where she also directs the Sam Nunn Security Program. Her research explores the relationships among technology, strategy, and governance. Hoover Institution, "Emerging Technologies and National Security: Russia, NATO, & the European Theater", 2/25/2019, https://www.hoover.org/research/emerging-technologies-and-national-security-russia-nato-european-theater, accessed on 6/18/2022)//gideon

That passage conceptually highlights the uncertainty, complexity, and issues of interdependence that exist in trying to understand the interactions between emerging technologies and international security. Predicting how these new innovations and breakthroughs in scientific understanding may be used is a challenge. Looking to history is one valuable past insight. One must be careful, however, to not be purely technologically deterministic. That is to not assume that because something is possible, or because something potentially may come about, that it is inevitable. History shows us that human ingenuity and use is more often a function of political decisions, regional security threats, and other factors of social, political, historical, economic, and cultural origin.

### 1NC – Technical Hurdles

#### Neurotech’s uncertainty requires jumping through innumerable hurdles.

Giordino ’12 [James; Samueli-Rockefeller Professor in the departments of Medicine and Neurosciences, and Scholar in Residence within the Center for Clinical Bioethics at Georgetown University Medical Center; 2012; "Neurotechnology: Premises, Potential, and Problems"; CRC Press; https://books.google.com/books/about/Neurotechnology.html?id=O6q8SbgeWjwC; Accessed 7-6-2022; RL]

LEGAL RAMIFICATIONS Inevitably, there will be instances in which NGT and NI, as any new neurotechnology, will fail or incur unexpected, adverse effects. How will uncertainties, the mechanistic paradox, and the technological imperative figure in to these situations and relate to constructs of responsibility and potential culpability for resultant harms? The question is difficult in that it involves practical, moral, and legal dimensions— each with somewhat varying premises. On the practical level, it is important to consider that any new technique or technology can manifest a variety of potential consequences (and, therefore, potential harms) given the conditions of novelty. Axiomatically, novelty entails some level of uncertainty and unpredictability, and this may be amplified given the intersecting unknowns of neuroscience, genetics, and neurotechnology (Giordano 2010a, 2010b). In the moral domain, it is important to examine the role of the physician as a steward of expert knowledge and to assess whether such stewardship has been upheld in evaluating the contingencies of using or not using a given neurotechnology in the care of a particular patient. Thus, although a number of potential neurotechnologies, Neurogenetic and Neural Tissue-Implantation Technology 63 including NGT and NI, could be employed (based on the current state of research, product development, and availability in the clinical milieu), the therapeutic and moral fabric of the medical fiduciary dictates that the physician must discern whether and which neurotechnologies should be used to afford each patient maximal good. Even in the most ideal situations, negative outcomes are possible, and if the regnant medical climate portends the future, then it is likely that there will be at least some call for legal responsibility and accountability for such occurrences. But given the relative novelty of these techniques and technologies, who can and should be held legally responsible—the companies that produce devices and implements used in NGT or NI? In light of the recent groundswell of class-action suits against medical device and pharmaceutical firms, it is probable that companies involved in NGT, NI, and related neurotechnological development will seek to insure and fortify against any legal culpability for unanticipated or adverse effects that these technologies might incur. Prima facie, the provision of informed consent might absolve physicians of (at least) legal responsibility for effects gone wrong; however, this then reinitiates the discussion of how much information a physician can provide (given the newness of these interventions) and should provide (given the intersecting uncertainties and range of adverse effects they could evoke). And what about patients? How should those for whom other forms of therapeutic intervention have been unsuccessful approach the use of such new techniques and technologies? Of course, this fosters a larger question of just how much information is enough, and how the amount, type, and quality of information relevant to a particular intervention is weighed in patients’ overall estimation of possible benefits and acceptable burdens and risks. When a novel neurotechnology is in incipient use, is a maxim of caveat emptor applicable, tenable, and sufficient to guide patients’ decisions? Furthermore, given the iterative nature of neuroscientific and neurotechnological progress, we must consider the possibility that tomorrow’s knowledge might render today’s interventions invalid, inappropriate, or at worst, wholly unsafe. And if and when this occurs, what legal approaches might be used to handle and litigate such cases given a lack of prior paradigmatic examples upon which to base historical casuistry?

## Case – Cognitive Biotech Bad

### 1NC – Arms Race

#### Pursuit of cognitive tech superiority fuels great power HET arms race, proliferation, and global military provocation

McCarty 14 (Kristen McCarty | Grew up in Clovis, California and graduated from Cal Poly in June 2013. While at Cal Poly, she earned her B.A. in Political Science with a minor in Psychology and has enjoyed being a member of the Pi Sigma Alpha political science honor society December 2012. She will begin a Ph.D. program in Sociology at the University of California, Davis in September 2014 and plans to pursue a career in academia | “BUILDING A BETTER SOLDIER: HUMAN ENHANCEMENT TECHNOLGIES IN THE 21ST CENTURY” | <https://digitalcommons.calpoly.edu/cgi/viewcontent.cgi?article=1006&context=paideia> | DOA: 7/5/2022 | SAoki)

Since World War II, technology superiority has been a major landmark of the U.S. military.75 As I have shown, human enhancement is one of the most rapidly growing areas of technology with military significance. Successful implementation of human enhancement technologies will give the United States, or any country that successfully harnesses them, an undeniable advantage over their opponents in warfare. They have the potential to make it easier and safer for soldiers to perform in combat but they also have the potential to disrupt the international balance of power. In the future, the strength and power of a military won’t be judged purely by its size or skill, but also on the quality of its enhanced soldiers. According to experts,76 “a weapon system can no longer be evaluated or enhanced in isolation from its human operator.”77 Soldiers are becoming a part of the weapon. In short, “the complexity of combat has increased, and with it the tempo of operations.”78 The international implications are likely to be two-fold. On the one hand, countries that can afford to develop these technologies will all be racing against each other to develop human enhancement technologies the fastest and most efficient ways possibly. The likely result is an HET arms race between the wealthiest countries in the world. In the past, arms races have had favorable results for advancing military technologies. However, hasty implementation before a technology has been adequately tested or refined can have deadly consequences. This is especially true when human beings are an integral part of the technology. The United States isn’t the only country pursuing human enhancement technology. China and Russia are likely to move much more quickly on this technology than most other countries, but it is unlikely that other international actors will be as open as the U.S. about what they are doing. The advantage this technology provides will not likely go unnoticed. There is a potential threat “for adversaries to exploit advances in Human Performance Modification, and thus create a threat to national security.”79 In creating new technologies that benefit a state, you’re opening up that technology for potential proliferation. Once it has been created, unless there is a standing governing body to police it, there is no way of controlling who will get their hands on it. According to David Axe, “it’s equally hard to tell to which terrorists, militants and criminal groups these countries might have ties—and whether new biological weaponry might proliferate these channels.”80 With a lack of transparency, international mistrust is likely to stew. The second potential implication deals with the relationship between the haves and the have-nots. Countries that aren’t one of the first several to implement human enhancement technologies in the military are likely to feel threatened by the increasing gap between their military power and the military power of countries with HET. The increase in power may seem like a provocation. Thus, in the 21st century the development of human enhancement technology may also trigger a security dilemma between less technologically developed countries and superpowers like the U.S.

#### Extinction

Vedoya 16 (Teresa Driollet de Vedoya | “The Transhumanism of Nick Bostrom and the Ultra-Humanism of Pierre Teilhard de Chardin” | <https://repositorio.uca.edu.ar/handle/123456789/4948> | DOA: 7/5/2022 | SAoki)

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Future human enhancements would be obtained by different means such as genetic engineering, pharmacology, information technology, molecular nanotechnology or artificial intelligence.6 Transhumanists hope that through the responsible use of science, technology and other rational means we shall eventually manage to become posthuman. They would develop a being with vastly greater capacities than current humans have.7 It requires that everybody should have the opportunity to become posthuman and that people should have the right to choose which technologies they want to employ to become more developed.8 Bostrom suggests about genetic enhancements: “We might speculate, instead, that germ-line enhancements will lead to more love and parental dedication. Some mothers and fathers might find it easier to love a child who, thanks to enhancements, is bright, beautiful, healthy, and happy. The practice of germ-line enhancement might lead to better treatment of people with disabilities, because a general demystification of the genetic contributions to human traits could make it clearer that people with disabilities are not to blame for their disabilities and a decreased incidence of some disabilities could lead to more assistance being available for the remaining affected people to enable them to live full, unrestricted lives through various technological and social supports. Speculating about possible psychological or cultural effects of germ-line engineering can therefore cut both ways. Good consequences no less than bad ones are possible. In the absence of sound arguments for the view that the negative consequences would predominate, such speculations provide no reason against moving forward with the technology.”9 While future technological capabilities carry immense potential for beneficial deployments, they could also be misused and cause enormous harm, to the extreme of causing the extinction of intelligent life. The greatest future risks are anthropogenic, not from nature. Destructive uses of advanced molecular nanotechnology, designer pathogens, nuclear arms race, high-energy physics experiments, and enhancing AI with an inappropriate goal system could cause the world to end in a bang.10 Other potentially negative outcomes include: widening social inequalities, a gradual erosion of meaningful human relationships, and ecological diversity. Such risks must be taken very seriously .11 The way in which we can avoid existential disaster is by thoroughly controlling our evolution. It will require the development of a singleton or a world order with one independent decision making power. Permanent control of human development requires global and solid coordination.12

### 2NC – Arms Race

#### Increased production of biotechnology will cause an arms race – escalation

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Renewed attention to biotechnology comes alongside an old geopolitical environment also made new, or great power competition between Russia, China, and the United States. Joining the ranks of strategic [competitions](https://foreignpolicy.com/2019/03/05/whoever-predicts-the-future-correctly-will-win-the-ai-arms-race-russia-china-united-states-artificial-intelligence-defense/) in artificial intelligence, cyber, and space technology, a biotechnology arms race could result in new anxieties over dual-use applications in tandem with bolstered biodefense regimes. The COVID-19 pandemic will undoubtedly alter international biodefense efforts such as pandemic preparedness and response. But states should be wary of expanding biodefense infrastructure without properly addressing advancements in biotechnology that could inflate the “[gray zone](https://thebulletin.org/2018/07/darpas-prepare-program-preparing-for-what/)” of biodefense. The unclear distinction between offensive and defensive work, or dual-use technology, that is imbedded in the nature of the biodefense task means states have to consider the capabilities and intentions of their adversaries, which are all the more unclear in a great power competition. Old dogs, new tricks. The [perceived threat](https://carnegieendowment.org/2018/04/17/new-killer-pathogens-countering-coming-bioweapons-threat-pub-76009) of new gene-editing technologies such as Crispr, coupled with advancements in synthetic biology, has not gone unnoticed. Crispr is a relatively cheap and efficient genome editing tool that allows scientists to modify and permanently alter DNA and RNA. Crispr is utilized in [research](https://ghr.nlm.nih.gov/primer/genomicresearch/genomeediting) on the treatment of diseases such as cystic fibrosis, heart disease, and even HIV. A biotechnology tool with clear promise, concerns over Crispr are rooted in fear of unintended consequences, and in the potential for nefarious actors to weaponize deadly pathogens. Concerns over synthetic biology, the broad term used to describe the construction of new “[biological entities](https://ebrc.org/what-is-synbio/)” from scratch, cite similar worries over how an adversary could manipulate this new technology. In the 2018 [National Defense Strategy](https://dod.defense.gov/Portals/1/Documents/pubs/2018-National-Defense-Strategy-Summary.pdf) (NDS) that laid the conceptual foundations for the revival of great power competition, the United States named biotechnology as a technology that alters the rapidly changing security environment, providing wider accessibility of potential weapons to more actors. The U.S. director of National Intelligence first included genome editing in a [2016 threat assessment](https://www.dni.gov/files/documents/SSCI_Unclassified_2016_ATA_SFR%20_FINAL.pdf), signaling the potential of dual-use biotechnology to have national security implications if deliberately or unintentionally misused. More recently, the United States[listed](https://www.state.gov/wp-content/uploads/2020/06/2020-Adherence-to-and-Compliance-with-Arms-Control-Nonproliferation-and-Disarmament-Agreements-and-Commitments-Compliance-Report-1.pdf) China, Russia, and Iran as countries engaged in dual-use biotechnology research with potential, but unconfirmed, implications for the Biological Weapons Convention, or the BWC. The 2020 report also included a direct indictment of North Korea as a country with an offensive biological weapons program. This apprehension goes both ways. General fears concerning the development of “genetic weapons” have appeared in official Russian military rhetoric throughout the last two decades. In 2006, Russia submitted a[paper](https://www.unog.ch/80256EDD006B8954/(httpAssets)/81FD1E9FD2A3A535C12571FE00499319/$file/BWC-6RC-S&T-RUSSIA-E-UNOFFICIAL.pdf) to the Sixth BWC Review Conference on the possibility of advancements in technology leading to the creation of “ethnic weapons.” President Vladimir Putin has made[statements](http://en.kremlin.ru/events/president/transcripts/24825) on the potential of biotechnology to transform weapons and defense. Russia’s 2015 [National Security Strategy](http://www.ieee.es/Galerias/fichero/OtrasPublicaciones/Internacional/2016/Russian-National-Security-Strategy-31Dec2015.pdf) highlighted the threatening presence of U.S. military-biological laboratories on Russian borders as well as the importance of developing critical technologies such as genetic engineering for national security purposes. China and Russia’s commitment to [a high-tech partnership](https://warontherocks.com/2020/08/the-resilience-of-sino-russian-high-tech-cooperation/) could also contribute to the perceived ambiguity over dual-use biotechnology. The two countries agreed to collaborate on the advancement of technologies such as artificial intelligence, neuroscience, and biotechnology, as a means to strengthen their “strategic partnership.” But both China and Russia have signaled a willingness to engage bilaterally with the United States on biotechnology innovation, which could help promote transparency. China bolstered its investment in biotechnology as a part of the [Made in China 2025](https://www.reuters.com/article/us-biotech-china-investment/as-china-builds-biotech-sector-cash-floods-u-s-startups-idUSKCN1M400G) campaign, which benefitted U.S.-based biotechnology firms on the receiving end of increased funding in 2018. That same year, the U.S. Committee on Foreign Investments (CFIUS) added biotechnology to a list of industries with restricted foreign direct investment, predominantly to [curb Chinese investment](https://www.forbes.com/sites/stevedickman/2019/05/24/us-crackdown-on-foreign-biotech-investment-makes-us-poorer-not-safer/#16ba6c025581) and protect intellectual property. Instead of promoting scientific exchange and collaboration, this decision may have made international biotechnology research more opaque. The U.S. military’s investment in biotechnology for biodefense also doesn’t provide the needed assurance to assuage state fears over dual-use research. The Defense Advanced Research Projects Agency, or DARPA’s,[interest](https://thebulletin.org/2018/07/darpas-prepare-program-preparing-for-what/) in utilizing biotechnology for the improvement of the warfighter, along with initiatives to [enhance textiles](https://www.defenseone.com/technology/2019/07/us-army-making-synthetic-biology-priority/158129/) and amend supply chain vulnerabilities using synthetic biology could contribute to the biotechnology ambiguity dilemma. That states are threatened by the potential dual-uses of biotechnology is clear, but how much they are willing to reveal about their own capabilities is less certain. New avenues for discussion are badly needed. The role of the BWC. The threat of dual-use biotechnology has occupied the imaginations of state parties to the Biological Weapons Convention since its inception in 1975. Now past its forty-fifth anniversary, the BWC institutionalized a norm against the use, development, and stockpiling of biological weapons. Review conferences, held every five years, were created in part to address new developments in science and technology as they pertain to the authority of the convention. Annual intersessional meetings for continuing discussions between BWC review conferences were added in 2007, but their productivity has been questionable. A 2016 [study](https://www.tandfonline.com/doi/pdf/10.1080/23779497.2016.1213135?needAccess=true) following the progress of science and technology discussions, one of the intersessional agenda items for the 2012-2015 period, found that an average of only 4.5 hours a year was devoted to the topic. The 2016 review conference was prepared to address developments in science and technology in its final report, but the Iranian delegation [refused](https://www.armscontrol.org/act/2017-01/news/disputes-mire-bwc-review-conference) to advance discussions unless member states agreed to return to protocol negotiations (a strategy that some analysts believe was a protest of the continued sanctions on its nuclear program). Efforts to introduce a verification protocol to monitor compliance with the BWC collapsed in 2001, and lack of a binding enforcement mechanism in the convention is often cited as the BWC’s biggest shortcoming. Iran’s uncooperative stance prevented state parties from producing a consensus document at the end of the review conference and establishing an intersessional program of work. As a result, the 2017 Meeting of State Parties was used for this purpose, and substantive discussions were delayed until 2018. While states did briefly discuss the dangerous potential of advancing biotechnology applications in their [2018](https://www.armscontrol.org/act/2018-09/news/experts-debate-biological-weapons-challenges) and [2019](https://undocs.org/en/bwc/msp/2019/mx.2/2)meetings, any definitive agreements will have to wait for the 2021 review conference. Shrinking the gray zone. It is not surprising that a flood of [analyses](https://warontherocks.com/2020/05/the-pandemic-and-americas-response-to-future-bioweapons/) and [op-eds](https://www.economist.com/united-states/2020/04/23/the-havoc-wrought-by-covid-19-will-spark-new-concern-over-bio-weapons) are considering how the pandemic might compare to or inspire the use of sophisticated biological weapons, despite its natural origins. COVID-19 has certainly provided a partial answer to a question undoubtedly asked by BW “[red teams](https://www.centerforhealthsecurity.org/our-work/Center-projects/red-teaming-global-catastrophic-biological-risks.html)” for decades: what could a global pandemic do to the international order and the stability of nation-states? Malicious actors need not imagine the consequences. That the U.S. State Department [overtly implied](https://abcnews.go.com/Politics/pompeo-enormous-evidence-unproven-theory-coronavirus-lab/story?id=70472857) the possibility that the COVID-19 virus was intentionally released from a Chinese lab highlights the diplomatic challenges of addressing a biological event, and the need to establish working pathways to avoid escalation. Addressing and institutionalizing the analysis of biotechnology is the necessary first step toward ensuring state parties remain in sync on the changing relationship between biodefense, biotechnology, and pandemic response. As a catalyst for change, the COVID-19 pandemic could push states to make real progress in the 2021 review conference, but not without productive Meetings of Experts and State Parties beforehand. Originally scheduled to occur in August and December 2020, respectively, the two intersessional meetings have been [moved](https://www.unog.ch/80256EDD006B8954/(httpAssets)/A9F47CAD01A4E48BC12585BD0023D6A0/$file/Chairs+letter+28.07.20.pdf) to December 2020 and April 2021 because of the pandemic, with the Ninth Review Conference still scheduled to take place the following November. At a minimum, states need to be prepared to imbed a permanent biotechnology working group into the convention to continually address and evaluate the impact of new technology. Otherwise, questions over whether new developments in synthetic biology are [covered by the convention](https://www.lawfareblog.com/some-synthetic-biology-may-not-be-covered-biological-weapons-convention) will continue to make states worried about their adversaries research developments, which could further encourage a biotechnology arms race. The biggest challenge for the 2021 review conference will be getting member states on the same page. The global impact of the COVID-19 pandemic will undoubtedly affect discussions and augment nations like Iran’s push for a verification protocol. States aren’t likely to build a consensus on this contentious issue before the next review conference, and time spent on this issue will be wasted. States can’t wait another five years to address the rapidly changing pace of biotechnology. The protocol question needs to be put on hold. States also shouldn’t avoid addressing the inevitable overlap between responding to natural versus intentional biological episodes. Russia has maintained that [discussing natural epidemics](https://www.unog.ch/80256EDD006B8954/(httpAssets)/1320B623DA211B86C125795E002FF953/$file/Russia.pdf) has no role at the BWC, but because strengthening biodefense is the best response to both problems, bolstering biodefense without dialogue creates a precarious security environment. Clarifying the intersection between natural and deliberate pandemic response could help states gage how their own biodefense efforts complement international biodefense coordination. If states better understand their national role and responsibilities in the international biodefense regime, they will be less inclined to pursue unilateral defense initiatives with obscure research trajectories. There is no doubt that biotechnology innovation is essential, and military improvements are a natural progression of advancing technology and research. But the return of great power competition invites the creation of arms races in new frontiers, biotechnology included. If individual actors are left to make assumptions about the potential dual-use capabilities of an adversary’s biotechnology research, they will have to assume the worst. A consensus approach to the growing dangers associated with biotechnology could provide the necessary fodder to unite states for a shared commitment to transparency. The COVID-19 pandemic has shown us the potential for a biological incident to upend global stability, and the implications are sobering. States just might have their common ground.

#### Turn: Human enhancement in the military causes flood of issues: arms race, military divide, and kills cohesion

Nayef Al-Rodhan 5-18-15 Nayef Al-Rodhan is a Neuroscientist, Philosopher and Geostrategist. He is an Honorary Fellow at St. Antony’s College, University of Oxford, and Senior Fellow and Head of the Geopolitics and Global Futures Programme at the Geneva Centre for Security Policy. Author of: [The Politics of Emerging Strategic Technologies](http://www.palgrave.com/page/detail/the-politics-of-emerging-strategic-technologies-nayef-rf-alrodhan/?K=9780230290846). Implications for Geopolitics, Human Enhancement and Human Destiny [Transhumanism and War, https://www.globalpolicyjournal.com/blog/18/05/2015/transhumanism-and-war]

Human enhancement technologies are expanding the frontiers of biotechnology and changing the nature of warfare, international relations and geopolitics. Human enhancement refers to the suite of techniques which alter the human body beyond its normal healthy state. While ‘therapy’ is meant to ‘fix’ or ‘heal’ something damaged, enhancement technologies aim to stimulate and augment the human body beyond its natural capacities. Some of the possibilities available soon, such as “personality pills”, super-intelligent machines or gene therapy to block normal aging, come with extremely disruptive side effects. As is frequently the case with technological innovation, the origins of enhancement technologies are closely linked to military research. Soldiers equipped with devices for increased muscle strength, better pain management or extra-alertness make ideal combatants. Yet whilst administering pills that enable stress resistance or erase post-traumatic stress might seem like ideal quick fixes, they raise profound ethical and security concerns. In their most extreme form, such techniques could push us beyond what it means to be human, effectively bringing us on the brink of transhumanism. Transhumanism challenges the very notion of the human condition as fixed, rooted and constant. [Interventions](http://isnblog.ethz.ch/security/inevitable-transhumanism-how-emerging-strategic-technologies-will-affect-the-future-of-humanity) to improve our bodies, modify our pleasure centres, eradicate pathogenic conditions, enhance cognitive functions or extend life will eventually alter emotions (e.g. fear) which are the result of millennia of evolution. The rise of the super soldier – at any cost The search for performance optimization via human enhancement in the military is not new. Stimulant drugs have been used in the army for decades. For instance, [amphetamine](http://www.dtic.mil/dtic/tr/fulltext/u2/a352591.pdf), a synthetic drug which enhances the neurotransmitters adrenalin and noradrenalin, started being widely available to US troops in the 1960s for its effects in enhancing alertness and physical endurance. More recently, in an effort to find safer alternatives, the military has switched to the use of modafinil, a drug first used by US troops during the 2003 invasion of Iraq. [Modafinil](http://ethics.calpoly.edu/greenwall_report.pdf) acts as a psycho-stimulant, enhances vigilance and overall cognitive and physical performance even in sleep-deprived individuals. It is estimated that the UK Ministry of Defence purchased 24,000 modafinil tablets in 2004. Apart from the use of such enhancements in the military, we are increasingly witnessing the rise of technologies that can alter human biology irreversibly, especially by incorporating technology within the human body. Such technologies are radically different from previous eras as they are much more invasive and potentially irreversible, marking a new phase in the quest to create super soldiers. The US Defense Advanced Research Projects Agency (DARPA) is now at the forefront of developing enhancement technologies. In the early 1990s, DARPA acquired an avid interest in biology. DARPA’s turn to [biotechnology and biomimetics](http://archive.wired.com/wired/archive/15.03/bemore.html) (getting inspiration from nature, the animal world and metabolic flexibility) is now well on track, and garnering growing federal funding. For the fiscal year 2015, DARPA’s [proposed budget](http://www.darpa.mil/NewsEvents/Releases/2014/03/05.aspx) request was of 2.915 billion, a steady increase from previous years. The projects for human augmentation resulted from the recognition that even with the most sophisticated weapons, war remains dependent on soldiers that are subject to physical, cognitive, or psychological vulnerabilities. This sentiment was openly expressed by the Agency, which stated that the human being was “[the weakest link in Defense systems](http://www.ft.com/cms/s/0/cb0d02d0-b894-11e2-869f-00144feabdc0.html#axzz3Oue8GUpr)”. [Techno-integration](http://publica.fraunhofer.de/documents/N-194631.html) became critical to achieving this purpose. This requires creating a symbiotic coupling between men and machines in order to enhance physical and cognitive fitness. This mostly concerned restorative medicine for a long time, but more recent advances in neural integration bring about the real possibility that the peripheral nervous system could be coupled with advanced technology with a simple plug. An extreme form of invasive technology currently being explored is a [micro-processing chip](http://www.informationclearinghouse.info/article4572.htm) which can be implanted beneath the skull and manipulated remotely. Experiments with so-called “[non-invasive brain stimulation](http://www.independent.co.uk/life-style/gadgets-and-tech/news/pentagon-experiments-with-electric-shocks-to-keep-drone-pilots-awake-9144361.html)” at the US Air Force Research Lab, made public in early 2014, tried a new technique to keep soldiers awake and alert with electric shocks. The results were promising: the electro-stimulation tested much better than the mere use of caffeine. The doses of electrical current were carefully controlled and succeeded in making soldiers wide-awake, refreshed and alert for as long as 30 hours. Although still at an experimental stage, the initiative proves that hijacking the brain for the end of military effectiveness will be used justify whatever scientific means. The basics of [neuro-stimulation](http://www.theguardian.com/science/head-quarters/2013/oct/07/neuroscience-psychology) now allow us to employ methods to boost our ability to learn, pay attention to the environment, better recall information, take risks or exercise self-control. The amount of knowledge we have on the frontal cortex already permits us to understand how to influence cognitive processes. Two major approaches are Transcranial Magnetic Stimulation (TMS) and Transcranial Direct Current Stimulation (TDCS) and the latter is already in use by the US military to improve the [performance of drone pilots](http://www.bbc.com/news/health-27343047). However, scientists caution that TMS and TDS can produce many unintended effects. The military’s ambitions could soon catch up with the neuro-stimulation technology to the extent that soldiers’ reactions, responsiveness and emotionality could be pre-programmed with precision. They could become faster, more agile, alert, more receptive and fast learners, more disciplined or docile or, if needed, less empathetic. Other projects pursued by DARPA in partnership with various universities across the United States include [programs such as](http://cyberlaw.stanford.edu/blog/2010/12/robots-ethics-war): “Accelerated Learning”, “Crystalline Cellulose Conversion to Glucose” (enabling humans to eat grass and other non-digestible plants), “Human-aided optical recognition”, (neuro-optical binoculars to detect threats), “RealNose”, (extra sensors to detect chemicals as accurately as a dog) and “Z-Man” (allowing humans to climb up walls like lizards). While DARPA officially claims these projects are without invasive mental or physical effects, controversies abound and many questions about their long-lasting implications remain open. [Human nature](http://www.sustainablehistory.com/emotional-amoral-egoism) is frail, vulnerable and less adaptable than other species. It is therefore not surprising that DARPA would explicitly defend human enhancement projects based on a pragmatic calculation of cost, time and military effectiveness: “the idea is not simply to replace people with machines, but to team people with robots to create a more capable, agile and cost-effective force that lowers the risks of US casualties.” Implications for international relations and geopolitics With these developments, questions of law, international competition and ethics will become more prominent as both states and societies will have to respond to these technologies and their risks of spinning out of control. Enhancement raises many ethical ’red flags’: how far will the imperative of “[military necessity](http://www.theatlantic.com/technology/archive/2012/02/more-than-human-the-ethics-of-biologically-enhancing-soldiers/253217/)” go in justifying biotechnological enhancement that would otherwise be considered unacceptable? Could soldiers become dehumanized tools, coerced into whatever is necessary to wage war? Are safety considerations taken into account, and are norms of ethical medical conduct extended to all enhancement technologies? Moreover, it will be critical to explore whether enhancement is reversible or not and to what extent a transhumanist soldier can switch back to the ‘pre-enhanced’ state. Considerations of risks from enhancement and transhumanism have been largely absent from the military, but it is high time the military gave more considerations to the ethical aspects of enhancing soldiers. These should cover both long-term consequences for the soldiers’ health, as well as the inequalities created between enhanced and non-enhanced soldiers, since enhanced soldiers might eventually need to be treated differently from the average, non-enhanced soldiers. [Questions of responsibility](http://www.isn.ethz.ch/Digital-Library/Articles/Detail/?lng=en&id=187086) will ensue as well. Should the enhanced soldier run out of control, who will be accountable: the soldier, the engineer or medical teams that enhanced him? Pressure could soon mount for the US to have an ethical review of its enhancement programs, an expectation that is easier to foresee in a country where demands for accountability can be consequential even in an institution as secretive as the Army. However, this might not be the case everywhere, which brings the need for global discussions and standard-setting for enhancement technologies. Human enhancement will be disruptive for the entire military establishment and have far-reaching international relations and geopolitical consequences. [At a unit level](http://ethics.calpoly.edu/greenwall_report.pdf), war-fighters might be enhanced differently, or selectively, creating thus a class of enhanced vs. “normal” soldiers. This will affect morale and unit cohesion drastically, potentially causing resentment in some and a false sense of entitlement in others. Such asymmetry of capabilities will also reflect in international competition and international law, where countries benefiting from advanced technologies of enhancement will possess an advantage over those who will continue relying on non-enhanced soldiers. In the more near future, the implications of human enhancement in international relations could entail similar reactions to those provoked by the extensive [use of drones](http://ethics.calpoly.edu/greenwall_report.pdf) by the United States. While one country might regard enhancement as justifiable, appropriate and defensible, others could perceive it as an unjust use of capabilities. This will further exacerbate the sense of illegitimacy in war and disproportionate material and human loss. At the same time, and as was the case with other technologies, it is not improbable to anticipate a race of development and acquisition of human enhancement technologies by many other countries in the coming decades, thus further complicating international conflict resolution, code of conduct and international law. In addition, given the potential effects of these technologies on emotions, remorselessness and increased physical power (for instance through the use of powered exoskeletons), it should be expected that the level of brutality in warfare could increase significantly, thus complicating the implementation of international treaties and post-conflict reconciliation and reconstruction efforts.

### 1NC – Cohesion Turn

#### Turn: Cell Research is highly controversial across Europe – causes infighting

Rosario Isasi et al. 6-7-22 1Dr John T Macdonald Foundation Department of Human Genetics, John P. Hussman Institute for Human Genomics, Interdisciplinary Stem Cell Institute [Mending the gaps: ethically sensitive cells and the evolution of European stem cell policy, <https://doi.org/10.2217/rme-2022-0043>]//WA

The past decades witnessed the slow evolution of Europe's heterogeneous stem cell (SC) policy and substantial scientific advances in the field. Parallel to these developments, professional organizations have grown in influence. With the recently revised International Society for Stem Cell Research's Guidelines as a backdrop, we address the evolution of SC policies in 46 European countries and discuss how they fare against evolving ethical standards, societal views, and scientific advances. We identify areas of convergence, divergence, and the suitability of extant governance mechanisms to meet their stewardship roles. Europe represents a rich case study as it encompasses a wide range of policy approaches present worldwide. Comparative studies provide an opportunity to promote insight into national frameworks and to foster international harmonization. Plain language summary European countries have adopted different types of rules or policies, including laws and professional standards, to regulate stem cell research. These differences are because each country has different history and cultures. Also, individuals and institutions (e.g., religious leaders, politicians and advocacy organizations) have different degrees of power to influence the type of policies that are adopted in each country. Over the past decades, stem cell policies have evolved slowly even with significant scientific advances. Yet, during this time, professional organizations have grown in influence, for example, the prominent International Society for Stem Cell Research, whose guidelines (or rules) are considered ‘best practices’ in the field. In this article, we identify and analyze stem cell policies in 46 European countries, comparing them against the International Society for Stem Cell Research's new Guidelines. In addition, we show the similarities and differences amongst these policies. Europe presents an interesting case study because the region includes a wide typology of policies like those adopted in the rest of the world, making this comparison useful for other countries as they consider the suitability of their own policies. In Europe, the stem cell research–clinical translation continuum is characterized by a heterogeneity of governance and policy frameworks reflecting the continent's diverse socio-cultural, economic and historical contexts. In the region, national and international sets of ‘hard’ (e.g., legislation, treaties) laws are supplemented by ‘soft’ ones (e.g., professional guidelines, funding policies, codes of conduct) offering different tools for enforceability and governance. Importantly, regardless of the approach, ethical considerations have acquired substantial importance as a normative tool for European policy making [[1](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B1)]. Similarly, the public and the patient advocacy community have also gained prominence as influential policy actors, while professional organizations have maintained their persuasive role. Globally, scientific advances in the stem cell (SC) field have occurred in parallel with the growth of professional organizations operating at the national and international stage. With different degrees of success, these entities have exerted influence in shaping the contours of responsible innovation, and thereby, fostering adaptive policy and governance. A notable example of this is the International Society for Stem Cell Research (ISSCR), whose Guidelines on stem cell research and clinical translation (hereafter: Guidelines) [[2](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B2)] provide contemporary scientific, ethical and policy standards. Indeed, globally, ISSCR guidelines have been deemed more than metaphorically ‘customary law’ ever since their inception in 2006, as they have continued to gain legitimacy by raising awareness of ethical challenges, guiding scientific practice, and aiding in the interpretation and implementation of policy. Recently, ISSCR updated its Guidelines, adopting strict recommendations for the regulation of clinical research and translation of SC-based interventions and substantially reconfiguring guidance for oversight of in vitro SC projects. Despite criticisms based on the absence of enforcement mechanisms and internal consistency [[3](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B3),[4](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B4)], among other reasons, the revised Guidelines have the potential to exert influence in policy developments as they are designed to reflect community standards and, in that way, they aim to complement national frameworks for research governance. Moreover, although both hard and soft laws affect the actual practice of SC research, it is unclear how European policy frameworks fare against evolving international norms represented, for instance, in the ISSCR guidelines. In addition, it is unclear how and why policies within European countries diverge and converge. Insights into these practices could lead to understanding possible gaps, contradictions and difficulties in governance and policy. Moreover, it could offer insights into how governance systems could equip researchers to act responsibly during the innovation process. In pursuit of these insights, this article addresses the evolution of SC policies in 46 European countries. With the Guidelines as a backdrop, we discuss central ethical and policy issues regarding contentious applications, including criteria for permissibility, oversight, and enforcement mechanisms. Comparative studies provide an opportunity to promote insight into national frameworks and to foster international harmonization. The European region represents a rich case-study as it encompasses a wide range of policy approaches present across the globe. Thus, evaluating areas of convergence, divergence and progression in this region can contribute to policy debates and development worldwide. Legislative building blocks past & present With no single policy comprehensively addressing SC across the entire research cycle, European SC policy frameworks are constituted by (i) a broad cluster of laws, directives, principles and norms governing assisted reproductive technologies (ART), biobanking, biomedical and genetics research which (ii) traverse the permissive to restrictive continuum (Appendix A Governance Approaches). Underpinning these models are foundational principles reflecting a society's common vision, moral values, and beliefs. Moreover, a ‘common Ethics’ in the SC field is apparent from the ongoing adoption of research funding frameworks [[5](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B5)], which include provisions for the inescapably controversial human embryonic SC (hESC) research as well as with the 1997 passing of the European Convention on Human Rights and Biomedicine [[6](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B6)]. Across Europe, as in other regions, the regulation of SC research has generally followed a linear path, with discussions surrounding the human embryo's biological, moral and legal status as an early central figure in the framing of socio-ethical debates and policy outcomes (e.g. Germany's Embryo Protection Act; Belgium's Law relating to research on embryo in vitro). This approach stems from the fact that early policy was embedded within normative frameworks governing ART (e.g. in Estonia [[7](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B7)] and Greece [[8](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B8)]). As such, primary goals have centered on preserving human dignity (e.g., preventing commodification, protecting the interests of unborn children) as well as integrity (e.g., cloning [[9](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B9)] and genetic engineering bans). During these early stages, policy reforms reacted to changes in societal perceptions (e.g., toward biological parenthood) and increased technological uptake which required the promotion of the right to benefit from scientific advances and to protect welfare interests (e.g., facilitating ART research or expanding access to related services) [[10](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B10)]. Similarly, striving to reach political compromises, European policy moved to regulate hESC research with blanket bans (e.g., Lithuania [[11](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B11)]), moratoria (e.g., The Netherlands [[12](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B12)]) or strict laws guided by the principles of proportionality and subsidiarity as pillars (e.g. UK, Czechia, France) [[13](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B13),[14](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B14)]. From European funding policies to national laws, the passage of time has not altered this decisive criterion: the use of embryos (and gametes) is justified if it is the only means to achieve important scientific goals for societal benefits. Furthermore, early socio-ethical debates on genetic engineering, reproductive and research cloning were also influential in the framing of policy responses [[15](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B15)] as reflected in the adoption of the Oviedo Convention [[16](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B16)]. Importantly, the debates that took place during these times have now been revisited with the advent of gene editing tools and the emergence of SC-based embryo modeling as developments unforeseen by policymakers. Stem cell-based embryo modeling & beyond Contemporaneous developments in SC-based embryo modeling [[17](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B17)], organoid [[18](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B18)] and human–animal chimera research [[19](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B19)] have triggered calls for policy review [[20](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B20)] based on fears of potential loopholes inadvertently allowing controversial research to proceed without appropriate governance controls or societal support. For instance, advances in embryogenesis allow for hESCs and human induced pluripotent stem cells (hiPSCs) to be coaxed to organize into structures that mimic aspects of human embryonic development. These SC-based embryo models (SCB-EMs) have been used to model post-implantation stages of human development from the formation of the amniotic sac [[21](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B21)] to neurulation [[22](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B22)]. Additionally, improvements in human-animal chimera research using SC may enable investigators to study human development and organogenesis in an unprecedented manner. Furthermore, gastruloid [[23](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B23)] research, which models events following the formation of the primitive streak, provides another interesting case study, as their scientific potential for disease modeling has driven a shift in well-established policy. The possibility of yielding entities that might faithfully replicate embryonic developmental processes [[24](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B24)] has prompted conceptual reexaminations, as SCB-EM do not fit neatly in pre-existing regulatory categories defining human embryos, gametes, or human research subjects. Because generally European national policies were initially created to govern ART, they often contain statutory decades-old definitions of what constitutes a human embryo (e.g., Bulgaria [[25](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B25)], Iceland [[26](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B26)] and Slovenia [[27](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B27)]) (see [Figure 2](blob://f2.xhtml/) statutory definitions of the human embryo). These definitions effectively establish distinct regulatory pathways depending on the embryo's methods of creation, which is illustrated in the (often arbitrary) demarcation between embryos created by sperm-egg fertilization or by other means. An example is presented in Spain [[28](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B28)] where an entity is deemed an ‘embryo' or 'pre-embryo' by reference to a human fertilized oocyte. Spanish law prohibits the creation of embryos for research purposes but allows pre-embryo creation via human somatic cell nuclear transfer to harvest stem cells. Other European laws categorize an embryo in terms of its potential to develop into a human individual or to reach a significant point on the developmental timeline (e.g., Belgium [[29](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B29)], The Netherlands [[30](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B30)] and Malta [[31](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B31)]). In the UK, following legislative review [[32](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B32)], the term embryo was considerably expanded, from the product of complete fertilization [[33](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B33)] to “an egg that is in the process of fertilization or is undergoing any other process capable of resulting in an embryo” [[34](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B34)] using human cells; or an ad-mixed entity that is the product of hybrid and chimeric processes. Importantly, here, expansive concepts and research have been accompanied by modernized, robust licensing and oversight systems [[35](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B35)]. Largely, European countries have committed to ban embryo creation for research. This commitment arises by the ratification of the Oviedo Convention (albeit stipulated reservations). Furthermore, the Additional Protocol prohibiting human cloning [[36](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B36)] or germline genetic engineering reflects European agreement that restrained compromises are necessary to protect human dignity and identity while advancing scientific progress (Appendix A lists countries that have ratified the Additional Protocol). Even countries adopting liberal approaches by permitting the creation of embryos for research purposes via different methods (e.g., UK [[37](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B37)], Sweden [[38](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B38)] and Belgium [[39](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B39)]) align with this restrained approach by committing to provide “adequate protection of the embryo”where embryo research is allowed [[40](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B40)]. In contrast, the ISSCR Guidelines diverge from common European policy by permitting the creation of embryos for research if projects stop at “well-defined timepoints” and undergo appropriate degrees of ethical review. Furthermore, to allow validation of increasingly advanced SCB-EM research, the Guidelines have issued a controversial [[41](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B41)] call for governments and oversight bodies to reappraise the ‘14-day rule’ – a gold standard preventing human embryos cultured in vitrofrom developing for longer than 14 days [[42](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B42)]. In the EU, regardless of where a country sits in the policy permissibility continuum, this rule continues to be ubiquitous (see [Figure 1](blob://f1.xhtml/) for countries that have adopted the 14-day rule). Similarly, the Guidelines sit in stark contrast with European policy regulating research on human–animal chimeric embryos. They recommend permitting human-animal chimera research and outline criteria for ethical review, while exempting in vitro culture from specialized review requirements. In contrast, almost half of European countries adopt a range of prohibitions on hybrid and/or chimera creation (e.g., Cyprus [[43](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B43)], Portugal [[44](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B44)], Switzerland [[45](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B45)]) ([Figure 1](blob://f1.xhtml/)). Only the UK regulates the practice extensively, while do not explicitly prohibit human–animal chimera research but ban different types of activities (e.g., implantation). Indeed, in most policies the term 'chimera' is either not defined, or prohibitions refer to the combination of human and animal reproductive material, with unclear implications for human–animal chimera research using hPSCs [[46](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B46)]. Direction from the Guidelines alone might prove to be insufficient to clarify the scope of extant legal prohibitions for research areas not explicitly described in law. The gradual liberalization of EU national policy A discrete trend toward policy liberalization continues to slowly emerge in Europe, which in turn, may have transformational effects in the entire region. Indeed, policy transfer might occur through joint problem solving in challenging issues such as with the curtail of unproven stem cell interventions or the regulation of interventions in early human development (e.g., embryo or germline). Alternatively, the promotion of more liberal policy models could happen by the active role of countries or international actors promoting their own models to foster their interests or seeking policy harmonization (ISSCR, European Commission). Finally, it can ensue as result of pressure exerted in the form of international scrutiny directing countries to legitimate their policy approaches. Policy liberalization is particularly revealed in the progression of French law, which lifted its restrictive approach of the ‘90s toward hESC and chimeric research’ [[47](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B47),[48](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B48)]. In 2021, France became the first country to specifically regulate the use of hPSC for gametes and SCB-EM creation, subject to the robust governance of the Biomedicine Agency and of local institutional ethics review bodies [[49](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B49)]. Unlike many of its contemporaries, France did not place a legal temporal limit on embryo cultivation until 2021. Following a previous National Consultative Ethics Committee [[50](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B50)] recommendation that embryo culture and research must stop after 7 days of development and, contemporaneous calls from researchers to not impose strict time limits, the revised law implements the 14-day rule. In addition, the law refines its prohibition on chimeric embryo research, forbidding the modification of human embryos by adding cells from other species but permitting the insertion of hPSC into animal embryos “for the purpose of its transfer to the female”, “subject to declaration to the Biomedicine Agency” [[51](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B51)]. Similarly, several other countries have relaxed restrictions on hESC research over the past 15 years, while attempting to de-exceptionalize the SC field. For example, in the mid-2000s, moratoria were dropped and prohibitions on embryo research in countries such as Denmark [[52](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B52)], Norway [[53](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B53)] and Iceland [[54](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B54)] were rescinded in favor of regulations allowing research on supernumerary embryos. Other countries shifted to allow cloning research (e.g., in Spain [[55](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B55)], Iceland [[56](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B56)] and the U.K. [[57](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B57)]). The evolving power of stakeholders influenced some of these developments, albeit with different degrees of success. For instance, in Germany, the influence of the National Ethics Council and the German Research Foundation [[58](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B58)] was effective for the relinquishment of blank prohibitions and for relaxing cut-off dates for the import and use of hESC lines. Also, in Ireland, the role of stakeholders (e.g., Catholic Church [[59](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B59)]) was influential in maintaining a status quo [[60](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B60)], despite calls from their National Bioethics Committee and other actors to adopt a more permissive approach [[61](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B61)]. As a result, Ireland remains without specific stem cell legislation, while embryo research is considered a permissible activity since a ruling from its Supreme Court [[62](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B62)] provided legal certainty regarding the in vitro embryo's legal status. Across European countries (as in the rest of the world), religious [[63](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B63)] and other cultural authorities continue to wield varying degrees of influence as stakeholders shaping policies related to embryo and stem cell research. Notable has been the uncompromising position of the Catholic Church, yet its influence has varied. For instance, in Italy [[64](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B64),[65](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B65)] it continues to be a prevalent stakeholder hindering progressive stem cell policy, while in Spain, religious opposition was unable to stop policy liberalization [[66](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B66),[67](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B67)]. In secular moral frameworks, permitting (under regulation) new and contentious uses of human pluripotent stem cells may be justified according to their po≥tential for providing therapeutic benefit. Research on somatic stem cells has historically been favored as an alternative to research on the human embryo. However, it remains to be seen how SCB-EM and chimeras combining hiPSC with animal embryos fit within religious conceptions of the nature of human life. Following decade-old attempts to shift an ‘embryo’-centric approach to one that focuses on governance, the Guidelines [[68](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B68)] encourage nations and professional bodies to move toward a dynamic model of policy, where blanket bans are replaced by proportional and robust governance. It is thus timely to probe Europe's current situation. Challenging the status quo: the role of regulation & oversight The dual mechanisms of licensing and ethics oversight play a pivotal role in fostering scientific integrity by influencing collective behavior. These deliberative bodies seek to rely on precedent, referencing previous dilemmas to judge similar proposals by consistent standards. Across Europe, governance is achieved through a plurality of actors and mechanisms, where a collection of laws and best practices establish the normative framework in which safety and ethical standards are implemented [[69–72](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B69)]. Stewardship over SC research practices is often exercised through statutorily established licensing and oversight mechanisms. Ensuing competency and reporting requirements that guide oversight bodies are based on research stages such as tissue/embryo procurement, embryo research, derivation, and uses of hPSCs (see [Figure 3](blob://f3.xhtml/) Governance mechanisms in selected countries). As highlighted by ISSCR, prospective review and ongoing monitoring for compliance with ethical standards must be conducted and vetted by an independent committee. European approaches converge in this regard. They all establish local or national specialized oversight bodies of multidisciplinary composition (e.g., biology, law, ethics and in some instances community representatives) to conduct such activities. Moreover, most countries generally follow an ISSCR-style tiered approach to oversight, at least with respect to embryo and hESC related research, which are subject to specialized or centralized ethics review depending on pre-determined criteria. In Europe, mostly due to historical and political contexts, some entities charged with specialized oversight have as core focus licensing and oversight of ART interventions or embryo research activities (e.g., Belgium [[73](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B73)], Greece [[74](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B74)], Hungary [[75](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B75)], Montenegro [[76](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B76)], North Macedonia [[77](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B77)], Portugal [[78](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B78)], Slovenia [[79](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B79)], UK [[80](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B80)]), while others have a broader remit by evaluating biomedical research in general (e.g., Cyprus [[81](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B81)], Czechia [[82](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B82)], France [[83](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B83)], Spain [[84](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B84)], Switzerland [[85](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B85)]) at the local level (Appendix B governance bodies tasked with review of embryo research). The ISSCR Guidelines, revised to reflect evolving consensus within the field, are meant to complement existing systems of oversight, aligning new research with pre-existing societal goals. Their overarching goal is to guide researchers to seek appropriate levels of ethical review for in vitro research involving entities that could be deemed ethically or socially controversial. Among the substantial changes introduced is the categorization of permissible types of research and their corresponding oversight models. For instance, they recommend that the derivation of hESC and research on “integrated” SCB-EM be subject to the same oversight process. Notably, its previous version called for heightened scrutiny for projects involving embryo-like structures that might manifest “human organismal potential” [[86](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B86)]. To this end, they abandon the latter nebulous and unmeasurable criterion and replace it with a proxy for researchers ‘intent and models’ capacity to “undergo further integrated development when cultured for additional time in vitro” [[87](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B87)]. Thus, reflecting that the inherent potential of human and human-like organisms can only be realized through sustained and deliberate external influences. But while this justification has evolved, the ISSCR has remained consistent with recommendations to subject embryo modeling using hPSC to a higher level of scrutiny than what might be required by national laws. The Guidelines extend a premise fundamental to European research governance, that research on entities with questionable moral status should proceed with caution. However, SCB-EM in Europe appear to be outside the purview of national systems of oversight designed to apply and enforce ethical norms that govern embryo research. It remains to be seen whether these changes will effectively impact European policy. Governance & the role of criminal law Governance mechanisms, such as those related to licensing and oversight, rest on legitimacy and accountability. Governance approaches should endow researchers to act responsibly through the research cycle while providing the necessary tools for all stakeholders to seriously commit to their moral responsibilities. In Europe, the publicly documented cases of violations of SC-based laws were mostly misconduct cases of fraud [[88](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B88),[89](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B89)] and failure to obtain ethics approvals. As with the rest of the world, punitive sanctions for violating research integrity adopt different modalities depending on the policy's binding nature and the stringency of governance mechanisms, amongst other factors. The trend to uphold criminal law in biomedical research, while exceptional to the regulation of science itself, has been widely adopted in European SC-related policy. Indeed, a favored approach is the imposition of fines and harsh prison terms for crossing statutory boundaries. Pecuniary administrative or civil sanctions (e.g., malpractice, liability) are seldom adopted ([Figure 4](blob://f4.xhtml/) Sanctions for embryo and SC research-related misconduct). The widespread association of criminal sanctions with misconduct related to embryo and hESC research is quite notable across European policies. Criminal law constitutes an old and powerful tool which societies around the world use to send the strongest condemnatory message. At the same time, it achieves retribution, denunciation and/or deterrence. However, the use of criminal law in the biomedical research context should be used sparingly and limited to morally reprehensible behavior. Instead, other types of penalties, such as moral and professional sanctions embedded in soft law (e.g., codes of conduct, professional guidelines) could be equally powerful than criminal ones and should actively be pursued. Professional organizations have a central role in making effective the latter aided by governmental and societal support. Legislative review in action Overall, European countries have several embedded mechanisms to evaluate the strength of their policy frameworks and prompt change if required. While uptake of the Guidelines is voluntary, the ISSCR aims to provoke countries to evaluate whether the results of decades-old compromises, which project pluralistic beliefs into research governance, regulate emerging technologies as intended. Reflecting the importance of iterative, flexible regulation that keeps pace with “ill-defined and often moving targets” [[90](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B90)], some European countries have adopted statutorily mandated periodic reviews to assess the implementation and effects of their laws (e.g., France [[91](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B91)], Germany [[92](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B92)] and The Netherlands [[93](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B93)]). An illustrative example of this is found in France, where parallel to ISSCR's policy revision process, the government conducted the mandated periodic review of its Bioethics Law [[94](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B94)]. As with the Guidelines, this process also concluded with significant modifications. For instance, prior approval from the Biomedicine Agency is no longer required for hESC research. Additionally, research to form gametes or embryo models from hPSC, along with certain types of chimera research, can proceed as planned under a presumption of approval, unless the Biomedicine Agency opposes the proposed project within a set period. As outlined in an impact report that accompanied scheduled Parliamentary review [[95](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B95)], the relaxation of requirements was due to the need to resolve regulation-induced delays which hamstrung French development in the field relative to countries like the UK, Spain, Belgium and the USA. The report shared consensus that hESCs were not “potential persons” and thus, hESC research was ethically distinct from research on the embryo. However, the National Consultative Ethics Committee remarked that both hESC and hiPSC can be used to produce “ethically sensitive cells” [[96](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B96)]. Thus, the law was modified to avoid litigation that would inevitably ensue if decisions on the acceptability of contentious hPSC research were left entirely to the discretion of the Biomedicine Agency. France's legal foundations for the governance of biomedical research may facilitate adaptation as the bioethics law is entirely contained within the public health code, a feature which enable policy change when it can be justified as serving the broad and malleable goals of public health. But France pairs this feature with a tool available to legislators across EU: scheduled general parliamentary review of legislation every 5–7 years (the exact interval has varied over time) which must be preceded with public debate for “any reform project on ethical problems and social issues raised by advances in knowledge in the fields of biology, medicine and health” [[97](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B97)]. Another example is found in The Netherlands, where the Embryo Law also incorporates scheduled review, ordered by the Ministry of Health, Welfare and Sport and conducted by academic researchers, every 5 years [[98](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B98)]. In the most recent review, the Minister announced an intent to regulate the insertion of hiPSC into animal embryos under this law [[99](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B99)]. In previous years, a moratorium on the creation of embryos for research purposes morphed into a general ban, subject to societal debate. The Dutch Minister's review also stressed a need for “broad discussion” about the moral dilemmas arising from embryo-like structures cultured from iPSCs. French and Dutch experiences facilitating renewed public engagement with ethical dilemmas may prove instructive for other countries seeking to update legislation while balancing pluralistic moral concerns. Policy decisions informed by a broad range of stakeholders and enacted by officials who can be held democratically accountable may align scientific progress with diverse societal priorities. While French and Dutch legislative review provisions seem to have catalyzed alignment with international norms, mechanisms for legislative evaluation do not guarantee change. However, they are still useful: for example, German legislative dormancy in the face of criticism may be interpreted as an affirmation of existing provisions. Review of German legislation by federally appointed experts has taken place continuously, and in recent years, consensus has built around a need for substantial revisions. The Stem Cell Act requires biannual evaluation by the Bundestag [[100](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B100)], and an associated ordinance calls for an annual activity report from the Central Commission for Stem Cell Research, a federally appointed committee which issues a non-binding opinion on every German proposal for research involving hESCs [[101](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B101)]. For years, the Commission's reports have called for further relaxation of the statutory cut-off date for the derivation of hESC lines allowed to be imported for research uses [[102](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B102)]. In addition, reports have called for other changes to keep with the spirit of the law. For instance, the Act requires that scientific research questions must have been clarified as far as possible with animal cells or experiments. However, as pointed out by the Commission, “in the future, cells derived from hESCs can contribute to significantly reducing the number of animals currently used for medical or pharmaceutical purposes”. Proposals with this aim in view would not be eligible for approval under the act in its current iteration. In its most recent report, the Bundestag also endorsed review of the ban on the use of hESC outside of a “research context” and stated that the “discourse about the ethical-legal classification” of “embryoids” should be “actively guided by science” [[103](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B103)]. Finally, in 2014, the Conference of Health Ministers assigned the German Ethics Council, an independent council of experts [[104](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B104)] with evaluating current developments in the field. A critical recommendation of the Council was to clarify and standardize the statutory definitions surrounding the human embryo across Germany's Stem Cell Act and Embryo Protection Act [[105](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B105)] to ensure entities like SCB-EM do not escape the reach of the law. To date, however, none of these concerns have been addressed in legislation. The UK presents a different situation, where persistent court challenges did not impede the flexibilization of policy. For instance, in 2008, the Christian Legal Centre and Comment on Reproductive Ethics asked for a judicial review of the HFEA's decision to approve research using human–animal cytoplasmic hybrid embryos, contesting the HFEA's licensing powers and the rationality of their decisions, as they believed that such powers only covered fully human embryos, not human hybrid embryos [[106](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B106)]. In contrast, the HFEA argued that the term 'human embryo' was not defined by the Act and their interpretation relied on scientific expertise. The court ruled that the claimant's case to be unarguable, that the HFEA pursued appropriate scientific guidance, and that the Act allowed for revision and reinterpretation following scientific advancements. Following this, revisions to the Act continued to follow a permissive path. Conclusion By eschewing bright-line prohibitions and eliminating ethical distinctions based on hPSCs provenance, the ISSCR Guidelines might have moved the forum for policy debates back to the halls of national Parliaments. They have further attempted to direct them to existing systems of ethical review in which research is “widely considered ethically acceptable”[[107](#B107)]. The flexibility conferred by professional guidance (soft law) informed by discipline-specific expertise suggests this form of governance might be better suited to adapt to new ethical dilemmas posed by scientific developments. Yet, public deliberation is essential if a policy is to reflect societal values and priorities and thereby gain legitimacy. Over the past decade, scientific organizations have repeatedly called for broad stakeholder engagement to reflect on and adapt governance strategies to address new ethical dilemmas that accompany scientific progress. True public deliberation on policy questions pertaining to stem cell research requires models for public engagement which have not yet materialized, perhaps due to lack of incentives [[108](file:///C:\Users\caitl\Downloads\WIP%207-7%20Research%20Biotech.docx#B108)]. Legislative review processes such as those adopted in France, the UK and Denmark, adapted to solicit stakeholder perspectives on the governance of related emerging technologies, may provide useful models to make technocratic governance process more accessible and reflective of public interests. Because of the absence of true commitment to inclusiveness in policy debates, we do not anticipate a change in the status quo. Future perspective In Europe, existing pathways to assess the suitability of policy and governance frameworks have not been widely used. As stagnant norms continue to govern a dynamic field, it is difficult to assess whether these frameworks are still fulfilling their stewardship roles and how they might evolve in the next decades. Responsible innovation is predicated on the capacity to adapt in response to changing environments. As science and society co-evolve, are extant policy frameworks meeting stakeholders' expectations as well as safeguarding important human interests? Promoting and delivering social value? Do they continue to satisfactorily reflect the socio-ethical principles that originally underpinned them? What is the weight of political, economic and other contextual factors in the adoption and implementation of policy? These are central questions to elucidate the social processes leading to, or required for, policy reform. The answers to these questions could also assist in evaluating whether governance structures are or will remain legitimate and sustainable in the future. These are all fundamental factors to support responsible research clinical translation, and we anticipate (or at least hope) that addressing these will occupy a central role in future policy and governance debates as well as their outcomes.

### 2NC – Cohesion Turn

#### Turn: Discussion over neuroscience and biotechnology is controversial and will hurt cohesion

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Biotechnologies, alike other human activities, are related to a variety of risks. For instance they can threat human life and compromise its quality, endanger the integrity of environment and finally, they can undermine economy and thus have impact on welfare and security. Dangerous activities are supervised and to some extend prohibited in most countries. The special problem with biotechnologies is to quickly recog- nize the risks and dangers in this field. For this pur- pose, general rules and measures can be insuffi- cient. Therefore special regulations concerning biotechnologies are needed. In order to secure this, social debates1 accompany activities which several people see as dangerous due to their specific per- ception of somatic, psychological, religious, cultur- al, environmental, economic and social risks. Controversial Biotechnologies Every use of biological material and processes can be labelled as biotechnology. There are numerous traditional biotechnologies. Nevertheless, this term is coined mostly for recent technologies, or for mere research in them. Many research practices based on radical manip- ulation of human biological material are controver- sial, especially those which result in creation of new life, or its destruction. The branches of stem cell reasearch, genetic manipulation and mixing of biological material (chimeras and hybrids2) are well known. Apart from those, new methods of healthcare with similar consequences shall be added, for example assisted reproduction. Radical interventions in other species, especially genetic manipulation, are similarly controversial due to their risks for both environment and humans. Sometimes, developed biotechnologies, which show no adverse impact on human life and envi- ronment, affect economy and welfare. The position towards biotechnologies often derives from positions towards related activities. For example, several routine health care practices have similar consequences for human life as the above-mentioned biotechnologies. Abortion and euthanasia are prominent sources of controversy. The debate on stem cell research is strongly con- nected to them. Technologies which are not based on biology can also be controversial due to their impact on the biosphere. Nuclear energy is disputed in several countries due to its risks and nuclear waste. Recently used information technologies raise ques- tions due to its impact on privacy. Future contro- versies can arise from development of nanotech- nologies. Bio- and other technologies can be controversial in both the research- and the development-phase and in subsequent routine use if they promise to be successful from a technical and a financial point of view. Ideologies as Fuel for Controversies For many, standards for solution of life situations, including controversies related to biotechnologies, derive from various ideologies and doctrines, including questions of religion, religion-based morality and idelogies which can be labelled as quasi-religious, such as humanism, socialism, con- servativism, liberalism, pacifism, “humanright- ism”,3 or environmentalism. These ideologies have impact on bioethics. Bioethics as such is an academic discipline which analyses moral aspects of medicine and biotech- nologies in a scientific manner, using philosophy and other social sciences, and articulates opinions on them. Bioethics is an extension of medical ethics which solely reflects the attention of physi- cians to moral aspects of health care. For the analysis of the relation between the European Union and controversial biotechnologies, three ideologies are important. The “Black”4 Christian criticism5 of several biotechnologies and routine practices originates from the appreciation of human life in its margin- al forms which is not generally recognized in all European countries. Moreover, also within the the several member states the questions related to the beginning and the end of human life are not fully answered and thus discussed controversially. Several member states show the tendency to accept human life in prenatal forms. Furthermore, criticism aimed not only at biotechnologies, but also at many other modern human activities, can derive from environmental- ism6. This ideology is based on the appreciation of environment as supreme value endangered by humans. “Green” criticism is also influential in several European countries. The strongest forms of opposition may even lead to civil disobedience. Several biotechnologies are also criticized by socialists and human right activists. For instance, “red” criticism perceives some biotechnologies as a danger for equality and social stability.7 The criti- cism finds wide support in Europe with long tradi- tion of striving for social justice and equality. Counter-values are, however, articulated too. New health care methods are demanded and wel- comed. Wealth is pleasant. New technologies are inherently good, if not proven otherwise. Furthermore, criticism is questioned whether its is really in compliance with values proclaimed by their adherents.8 Country as Appropriate Forum for Solution of Controversies Biotechnologies are developed and used interna- tionally and knowledge about them is exchanged globally. Nevertheless, controversies arise and are settled separately in particular countries due to dif- ferent religious, moral, cultural and political views. However, there is a homogenous attitude towards certain biotechnologies in many countries. Here, consensus is easily transformed in law. Some other technologies remain controversial on the national level as well,9 which can result in compro- mises. In those cases the majority has to decide the matter. If the political majorities have changed, new policies and laws can often easily follow.10 Nevertheless, one has to consider that elites always play a prominent role in the political decision-mak- ing. In countries with authoritarian regimes, poli- cy is formulated by governing elites. However, tra- ditions and beliefs are usually taken into considera- tion. Within the social debate, films of the sci-fi genre often play an important role in the public imagina- tion of risks related to them.11 Trivially speaking, the reality is, however, quite boring, because no horrible threats have been identified until today. Controversies related to biotechnologies can be per- ceived by close observers, involved persons and experts as important. Nevertheless, the interest of the public in them is often limited and volatile. As a consequence, the circle of so-called experts remains quite small. Thus a few experts can enjoy considerable influence on new regulations. National Policies and Laws The solution of the discussed controversies can only be carried out by national policies and laws. Let us assume that a worldwide principle of law, which means that individuals can do everything what is not prohibited. Most countries, furthermore, rec- ognize the right to conduct research as a funda- mental freedom12 or at least recognize the academic freedom.13 Consequently, any restrictions of research in biotechnologies have to be checked on their compliance with the basic constitutional prin- ciples of the concerned state. Developed countries now regulate risky and con- troversial biotechnologies with specific laws14, because the application of general legislation is often incovenient. The results can be unsuitable because competing values must be examined by authorities and judges. In this context, specific leg- islation provides greater legal certainty. Even spe- cific legislation, however, remains often vague. Therefore, administrative practice is important. Measures of administrative law are applied. Restrictions are listed, licencing for controlled activities is introduced and non-compliance is sup- pressed. Special bodies are established for examina- tion and supervision of controversial biotechnolo- gies. Committees of ethics15 composed of experts on technology, lawyers, bioethicists, clergymen and representants of various attitudes shall seek justifi- cation for decisions on controversial projects. However, policy is not limited to the dichotomy per- mitted versus prohibited. States can incourage (or discourage) research, development and use of biotechnologies with various incentives or with absence of them, such as tax exemptions, subsi- dies, and patent protection. Furthermore, public institutions often engage in research, development and promotion of biotechnologies. Laws related to these incentives and to this engagement also incite disputes if biotechnology is controversial. Therefore, such legislation often enjoys similar attention. In the European Union, Directive 98/44/EC on the legal protection of biotechnological inventions has harmonized laws of member states. Its adoption and implementation in several mem- ber states faced considerable opposition. International Standards for Controversial Biotechnologies There are no two groups of countries with opossing policies towards controversial biotechnologies. Instead, various combinations of restrictive and lib- eral approaches mixed with different methods of support can be observed. Very unusual alliances would be possible if controversial biotechnologies were in foreground of international relations.16 On the other hand, countries with similar political, economic and social conditions, which are close allies, disagree often profoundly on controversial biotechnologies.17 Under these conditions a worldwide standardisa- tion of biotechnologies will be difficult to achieve. The engagement of United Nations Educational, Scientific and Cultural Organization (UNESCO) is limited to declarations18 and reports. Although those instruments are not directly legally binding, they show influences on the national regulations. In addition, the Food and Agriculture Organization Global Nature of Contemporary Biotechnologies Despite climatic and other differences, there is only one biosphere and only one human species on our planet. Thus, most biotechnologies can be used worldwide. Research and development of biotechnologies is expensive. These features make them suitable object of international use because they need to be paid off. Another ground for internationalization are their economic advantages. Consequently, there are numerous cross-border activities related to biotechnologies. Firstly, exchange of methods and technologies shall be mentioned, both for free and for remuneration if protected with patents or confidential. Furthermore, international trade in services, including cooperation in research pro- jects, trade in related goods (equipment and sub- stances), migration of researchers and experts and investment related to biotechnologies are common institutes. Science is now concentrated in the most devel- oped countries: in the United States of America, in West Europe, in Japan and in few other most devel- oped countries. There is edge of effective science21 in many less developed countries. Finally, progress in biotechnologies is often achieved in poor, but populous countries capable to mobilize ressources, for instance in China or in India. There is a lack of research and development of biotechnologies in poorer countries of Africa, Asia and America. Nevertheless, they can be introduced there and controversies can arise there, too. Response of International Economic Law Research and development is excluded from coun- tries with restrictive policy. Therefore, it can move to other countries if conditions are suitable there. This diversion, however, seems to be limited.22 The impact on international trade is more signif- icant. For instance, there were several long-lasting disputes related to controversial biotechnologies in the World Trade Organization related to restrictions on importation of meat from animals treated with hormones23. Food made from genetically modified organisms also incited international disagree- ment.24 No Consensus of European Countries There are values shared by all European countries, their representatives and people, such as the conti- nental idea of human rights.25 Their liberties are protected and harsh treatment (death penalty, tor- ture) is excluded. Other European values are democ- racy and welfare, based on equality. Nevertheless, there is a lack of consensus in many border issues among European peoples. This lack becomes obvious in connection with several controversial biotechnologies and methods of bio- medicine. The level of economic and social development plays no role. There are comparable countries with opposing views on biomedical issues.26 On the con- trary, religiosity of population and insistence of elites on particular values seem to be crucial.27 Because of these differences it is doubtable, whether there is a single European bioethics despite close exchange of ideas among European scholars.28 Role of the Council of Europe Speaking about controversial biotechnologies, the Council of Europe shall be mentioned before the European Union. Membership confirms accepta- tion of European standard of human rights. The Convention for the Protection of Human Rights and Basic Freedoms and protocols to it,29 are silent on controversial issues of biomedicine. The European Court for Human Rights avoids to interpret the Convention, establishing values not common for European countries in cases of abor- tion and euthanasia. This tolerance of different approaches is known in the case-law of the Court as margin of appreciation enjoyed by particular juris- diction.30 However, there is little case-law on biotechnolo- gies. It is difficult to interpret fundamental rights and freedoms as relevant for several controversial biotechnologies without undue activism beyond development of interpretation of the Convention as a “living document”. The Oviedo Convention31, which adresses health care, its content,32 the debate about it,33 and limit- ed participation34 of member states of the Council of Europe confirm this lack of European consensus on several crucial issues of bioethics. These conditions do not exclude activities of experts attached to the Council of Europe resulting in reports and conclusions, sometimes endorsed by the Committee of Ministers and by Parliamentary Assembly. Relevant Features of the European Union One of the principal tasks of the European Union35 is advanced economic integration of member states.36 There is no comparable international eco- nomic integration in the world until now. From an institutional and a legal point of view, the European Union has gone further than any other international organisation. It shows a supra- national structure, its laws enjoy direct effect and primacy.37 Member states can thus be forced to apply standards they refuse. Nevertheless, the European Union is no state and thus has limited opportunities of pushing through its opinions. Many observers are convinced that these short- comings are caused by absence of a nation in a political sense (demos).38 Language of wider com- munication is needed.39 This absence excludes gen- uine European politics. Public debates become more difficult beacuse of lingual borders, including dis- cussion about controversial biotechnologies, albeit public usually shows little interest in them. This discussion cannot be replaced with dialogue of experts and academics. Comparison to the United States of America Due to many similarities, the United States of America can be compared with the European Union. There are, however, some crucial differ- ences. The United States have a stable base for statehood. Americans form one nation with one language. Therefore, centralised power becomes possible. There are however, different religiosity and cul- ture in the United States. Americans are not a homogenous nation40 from in these aspects, which is similar to European nations. The American feder- alism accomodates this heterogenity. The competence for regulation of controversial biotechnologies is partially centralized, especially if it is necessary for free interstate commerce. The Federal competences were interpreted broadly in the last century in the United States.41 Nevertheless, they have not yet been consequently used to regulate biotechnology. Still, Federal government is fiscally dominant. It spends huge money on research, including biotech- nologies. Therefore, dispute on financing is the most important issue of federal policy on controver- sial biotechnologies.42 It should be noted that sever- al biotechnologies discussed are not controversial in the United States as they are in Europe.43 Restrictions of European Member States in the Light of Basic Economic Freedoms Controversial biotechnologies, including research and development related to them, form a part of economy. Therefore, principles and standards relat- ed to the internal market of the European Union are applicable. “The principle of principles” of European eco- nomic integration is equality.44 No discrimination of foreign products and factors of production is allowed. Furthermore, equally applied requirements which hinder interstate trade can also be scruti- nized whether they are justified with reasons of general interest and whether they are necessary and proportional. If there is no danger for the public health of con- sumers or the integrity of the environment, goods must be allowed. It is hard to imagine acceptation of obstacles related to moral aspects of production of these goods or even research leading to them. Due to reluctance of many Europeans, genetical- ly modified organisms were treated with suspicion in the European Union for one decade. The approach has been relaxed later.45 Extraordinary restrictions can be hardly accepted due to its impli- cations for interstate trade in goods.46 Similar attitudes can be expected towards ser- vices related to controversial biotechnologies. Nevertheless, it is impossible to analyse the issue here due to heterogenity of services and modes of their cross-border trade.47 In general, economic activity without cross bor- der elements and consequences is left to national regulation, if there is no harmonization. Therefore, different standards are acceptable if applied with- out discrimination.48 Enterprises from abroad using freedom of establishment cannot import lenient rules. What would not be accepted in the European Union? Attempts of member state “to export restric- tions” to countries with liberal approach, for exam- ple: (1) bans applied on researchers – citizens to par- ticipate abroad on research prohibited at home, (2) restrictions applied on investors in controversial biotechnologies abroad, (3) bans on exportation and importation of services and goods49 which are inputs or outputs of controversial biotechnologies, and (4) consumption abroad of services which result from controversial biotechnologies. The European Union will also treat with suspi- cion (5) restrictions on cooperation of domestic research companies and institutions with foreign entities involved in banned research, or (6) curtail- ing of such cooperation with public money. Such “exportation” of restrictions (boycotts and embargos) is used against states which threaten peace. It covers biotechnologies which can be used for making of biological weapons. There are, how- ever, few examples of such approaches in the European Union.50 Member states which restrict particular biotechnology accept consequences of economic integration. In some cases, the membership in the European Union seems to be more important than absolute insistence on values.51 Therefore, it is possible to label these values as sec- ondary ones. Due to this, none of the disputed biotechnologies causes long-lasting tensions among member states of the European Union. Harmonization of Standards The principal competence for harmonization and unification by the European Union is justified with needs of economic integration.52 Several controversial biotechnologies are obvi- ously covered by it, such as patents for biotechno- logical inventions,53 production and distribution of genetically modified food,54 and development of novel pharmaceuticals.55 And the European Union has indeed shown the ability to regulate those topics. Most member states accept this with their approval in the Council, although these legislative interventions encounter criticism. “Blacks”, “greens” and “reds” influential in several member states expressed concerns or opposed it. Due to the competence of the European Union in agriculture and energy policy, controversial support of biofuel was launched several years ago.56 Other controversial biotechnologies, however, fall outside the competences of the European Union. Certainly, there is some distortion caused by existing differences, for example, reproductive tourism.57 Many member states support liberal approaches. Therefore, Europe-wide restrictions can hardly pass the Council from a political point of view. Albeit, there are repeated calls for such Europe- anisation of restrictions by politicians of member states which have adopted restrictive policy. This tendency to impose standards resulting from moral conviction on other people and nations is under- standable from a psychological point of view.58 On the contrary, member states with liberal approach to particular controversial biotechnology do not need Europe-wide liberalization. It would complicate relations with member states which insist on restrictions. Genuine and False “Soft Law” The European Union encourages discussions about policies in areas outside its competence or outside its political capacity. Controversial biotechnologies are no exception. Permanent bodies have been established59 and ad hoc groups of experts are called from time to time to advise on particular issues. Certainly, these activities deliver interesting studies of laws and practices in member states and elsewhere. Interesting generalisation is formulat- ed. Nevertheless, such production can be hardly regarded as soft law, although it is often flanked with recommendations. There is limited, post- poned and indirect transformation of ideas into proposals of legislation. The impact on bioethics shall not also be exaggerated due to number of these reports. The European Parliament tries to promote values considered by majority even on legislation clearly outside competences of the European Union with recommendations in several sensitive issues (repro- 57 For analysis of reproductive tourism in the European Union see Pennings G., Legal harmonization and reproductive tourism, Human Reproduction, vol. 19, no. 12, pp. 2689-2694. 58 See Pennings G. (infra), “Most opponents of reproduc- tive traveling start from the premise that the tougher and more restrictive legislation is also morally superi- or. (...) apparently, people are more convinced of the moral correctness of their prohibitions than of the cor- rectness of their permissions”. 59 European Group of Ethics in Science and New Technologies (EGE) was established by the Commis- sion (see decision 2005/383/EC). ductive health).60 I find this approach unhappy for political reasons.61 Furthermore, its feasible appli- cation on controversial biotechnologies is limited.62 Common Research Policy as Field for Europeisation of Controversies Due to the described lack of competence and capac- ity to adress controversial biotechnologies, the recent development in European Union is compara- ble to the one in the United States of America. Controversies mutate into dispute on financing of controversial research. A significant amount of the EU-budget is spent on research.63 Also, the amount spent on biotech- nologies has increased in the last years,64 which has got a clear base in primary law65 and detailled legislation.66 Chronic controversies are awaked when frame- work programs are submitted for aproval. Several member states usually object European financing of particular controversial biotechnologies.67 Some measures of the policy can be vetoed. Otherwise, other member states feel it suitable to take into account concerns of these states. Therefore, com- promise solutions have been achieved.68 Restrictions of European financing can be, how- ever, easily set off with financing of member states with liberal approach. Member states of European Union have more money than the European Union. Future Role of the European Union The Treaty establishing a Constitution for Europe tried to push the organizational structure of the European Union closer to those of Federations. Nevertheless, it does not make the EU a state. This ambitious project failed in a first step. By now, the Treaty of Lisbon tries to retain as many changes as possible envisaged by the Constitution including several related to biotech- nologies.69 Nevertheless, there are weak political and legal conditions for a profound change of the European Union at the moment. Therefore, the process of harmonization is difficult even in smaller fields such as controversial biotechnologies. Possible Engagement of the European Union Can the European Union adopt laws on controver- sial biotechnologies? Yes. The controversy, howev- er, cannot occur among member states. For example, some heinous research activities which are criminalized in many member states can be added to the list of crimes, which the European Union contributes to their prosecution and punish- ment.70 Several member states would introduce rel- evant laws more quickly than without such engage- ment. Europe-wide consensus can be integrated into foreign policy if other countries have different approaches towards particular biotechnology. At the moment, however, I do not identify any such case. Success, however, should not be expected. Furthermore, there seem to be other priorities in European diplomacy at the moment. I suggest European engagement for a greater transparency.71 The European Union is a communi- ty of closely integrated nations, which a high level of trust is necessary for. Therefore, other European nations shall have the right to know about contro- versial biotechnologies and research in them, in particular member states. The enumerated contro- versial biotechnologies and research related to them shall be reported to the European Union and information shall be later disclosed worldwide. I admit that there is – if at all – only a dubious com- petence even for this measure. The Czech Republic and Controversial Biotechnologies Opinions on laws and ethics related to biomedicine and biotechnologies are rarely presented interna- tionally by people from post-communist east European countries for several reasons. Therefore, I want to finish the paper with short information about the position of my country in biotechnologies and a discussion of controversies related to them. The Czech Republic is a new member state of the European Union since 2004. It was admitted to the EU together with other post-socialist countries. The Czech economy has been quickly approach- ing richer West European economies. The Czechs enjoy fruits of modernization in recent times. The Czech democracy is regarded as stabilized. Efficacy of public administration has been enhanced in the last decade. Nevertheless, there are several shortcomings. For example, the judiciary is slow and debates on vari- ous issues including controversial biomedicine and biotechnologies are primitive compared to West European countries. The public spending on research and develop- ment is low if compared with the United States and with Western and Northern Europe.72 Nevertheless, there are examples of successful international coop- erations of Czech research institutions and teams. The general approach towards controversial biotechnologies in the Czech Republic is optimistic, which is due to the fact that science is appreciated in Czech society. Different political and economic regimes have changed nothing on it. To some extend, it is possible to hear “black” criticism. Nevertheless, it is almost deprived of influence.73 Czechs belong to the least religious people of Europe, which makes the authority of churches very weak. “Green” criticism is stronger than in any other post-socialist country. Nevertheless, its achievements are also limited. The understanding for harmonization measures unnecessary for the internal market will, however, be low. The Czech Republic shows reluctance for further integration, being hardly capable to ratify new primary law.74 There is not much of an academic debate on eth- ical and legal aspects of controversial biotechnolo- gies.75 On the contrary, those topics are imported from abroad into Czech bioethics

### 1NC – Overmatch Turn

#### Pursuit of advanced conventional weaponry locks the US into overmatch military strategy

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“For decades, our adversaries have studied our methods and invested specifically in capabilities that mitigate our strengths,” Michael Griffin, the undersecretary of defense for research and engineering, told the House Armed Services Committee in April. “**They are systematically and strategically developing and fielding advanced systems more rapidly than us. This erodes the advantage that DOD** [the Department of Defense] **has maintained in** conventional warfare **and impedes upon our ability to project power**.” (“Power projection,” in Pentagon-speak, means the ability to attack and invade countries across the globe.) “In **this increasingly competitive environment,**” Griffin continued, “**the department must pay much more attention to future readiness and regaining our Joint Force** conventional overmatch.” This means not only more things—more tanks, planes, missiles, and so on—but more capable things. **Technology is seen as a “leveler” in the emerging strategic competition, because it has allowed China, Russia, and others to find ways to counter America’s advantages in** conventional military hardware. **By investing in** AI, cyber, robotics, and other technologies **available from commercial sources, those countries have been able**—or so we’re being told—**to eat away at America’s technological superiority**. The response to this challenge is obvious: Spend more money on technology—a lot more money. THE IMPLICATIONS OF OVERMATCH With virtually no public or congressional discussion, overmatch has become the driving principle of US foreign and military policy. This means, at the very least, that US military spending will continue to exceed that of all potential adversaries and that the country’s arsenals will be perpetually replenished with new and more capable weapons. The Pentagon’s proposed budget for fiscal year 2019, released last February, calls for spending $686 billion—an increase of $74 billion, or 12 percent, over FY 2018. (These figures do not encompass spending on nuclear weapons via the Department of Energy or other security-related expenditures outside the Department of Defense.) But this is merely a start. **To maintain overmatch, the Pentagon**—and its supporters in Congress and the White House—must keep enhancing the military’s capabilities **to defeat China and/or Russia in a full-scale confrontation**. “While our trajectory is in the right direction,” Mattis told Congress in April, “our work has just begun.” Among his stated goals: to expand the Navy from an existing force of 280 ships to 355; to acquire new high-tech conventional weapons capable of overpowering Chinese and Russian defenses against American attack; and to replace almost the entire US nuclear stockpile with new, more capable atomic weapons.

#### Pursuing overmatch sleepwalks the world into nuclear armageddon

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CONTENDING WITH OVERMATCH There’s no getting away from it: overmatch will govern US foreign and military policy for years into the future. **It will increase the risk of great-power war** and encroach upon civilian life. **The Democrats in Congress cannot stop it,** partly because they lack the power to do so and partly **because most of them also subscribe to the notion of permanent US military superiority**. Resistance from the peace and antinuclear movements, such as can be mustered, is unlikely to slow the pace of expanding militarization. **What is needed**, therefore, **is a clear-headed critique of overmatch and a strategy for contesting its most dangerous components**. Overmatch rests on the assumption that the United States can and should devote whatever resources it takes to preserve a significant military lead over all potential competitors indefinitely. This is both practically and morally flawed. **America’s competitors will always find new ways to overcome US advantages**, **while any sustained drive to stay ahead of all conceivable threats will eventually drain this country of its economic, scientific, and technological assets**. As the architects of the original US-Soviet arms-control agreements eventually concluded, negotiating parity in weapons capabilities is a much more sensible strategy. The moral flaws in overmatch derive from its repudiation of reciprocity in international relations. During the Cold War, the leaders of the United States and the Soviet Union—no matter how much they detested each other—determined that it was necessary to meet periodically to address global dangers lest they provoke a conflict that could spark nuclear Armageddon. **The advocates of overmatch have no such inclinations**: For them, the only acceptable position for every potential US rival is subordination to Washington in world affairs. **Though no doubt a pleasing prospect to the occupants of the White House, this is an unacceptable condition that will goad countries like China and Russia to engage in a perpetual struggle to overcome their inferior status**—a struggle that will result in a monumentally costly arms race and perhaps even global war.

#### Drives AI integrated hyperwar – ensures extinction

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There could be no more consequential decision than launching atomic weapons and possibly triggering a nuclear holocaust. President John F. Kennedy faced just such a moment during the Cuban Missile Crisis of 1962 and, after envisioning the catastrophic outcome of a US-Soviet nuclear exchange, he came to the conclusion that the atomic powers should impose tough barriers on the precipitous use of such weaponry. Among the measures he and other global leaders adopted were guidelines requiring that senior officials, not just military personnel, have a role in any nuclear-launch decision. That was then, of course, and this is now. And what a now it is! **With artificial intelligence**, or AI, **soon to play an ever-increasing role in military affairs, as in virtually everything else in our lives, the role of humans, even in nuclear decision-making, is likely to be progressively diminished**. In fact, in some future AI-saturated world, it could disappear entirely, leaving machines to determine humanity’s fate. **This isn’t idle conjecture based on science fiction movies or dystopian novels**. It’s all too real, all too here and now, or at least here and soon to be. **As the Pentagon and the military commands of the other great powers look to the future, what they see is a highly contested battlefield**—some have called it a “hyperwar” environment—**where vast swarms of AI-guided robotic weapons will fight each other at speeds far exceeding the ability of human commanders to follow the course of a battle**. At such a time, it is thought, **commanders might increasingly be forced to rely on ever more intelligent machines to make decisions on what weaponry to employ when and where.** At first, this may not extend to nuclear weapons, but **as the speed of battle increases and the “firebreak” between them and conventional weaponry shrinks, it may prove impossible to prevent the creeping automatization of even** nuclear-launch decision-making**. Such an outcome can only grow more likely as the US military completes a top-to-bottom realignment intended to transform it from a fundamentally small-war, counter-terrorist organization back into one focused on peer-against-peer combat with China and Russia**. This shift was mandated by the Department of Defense in its December 2017 National Security Strategy. Rather than focusing mainly on weaponry and tactics aimed at combating poorly armed insurgents in never-ending small-scale conflicts, the American military is now being redesigned to fight increasingly well-equipped Chinese and Russian forces in multi-dimensional (air, sea, land, space, cyberspace) engagements involving multiple attack systems (tanks, planes, missiles, rockets) operating with minimal human oversight. “**The major effect/result of all these capabilities coming together will be an innovation warfare has never seen before: the minimization of human decision-making in the vast majority of processes traditionally required to wage war**,” observed retired Marine General John Allen and AI entrepreneur Amir Hussain. “**In this coming age of hyperwar, we will see humans providing broad, high-level inputs while machines do the planning, executing, and adapting to the reality of the mission and take on the burden of thousands of individual decisions with no additional input.” That “minimization of human decision-making” will have** profound implications **for the future of combat**. Ordinarily, national leaders seek to control the pace and direction of battle to ensure the best possible outcome, even if that means halting the fighting to avoid greater losses or prevent humanitarian disaster. **Machines**, even very smart machines, **are unlikely to be capable of assessing the social and political context of combat, so activating them might well lead to situations of** uncontrolled escalation**.**

### 2NC – Overmatch Turn

#### Conventional weapons are the key driver of the overmatch strategy

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Even five years ago, there were few in the military establishment who gave much thought to the role of AI or robotics when it came to major combat operations. Yes, remotely piloted aircraft (RPA), or drones, have been widely used in Africa and the Greater Middle East to hunt down enemy combatants, but those are largely ancillary (and sometimes CIA) operations, intended to relieve pressure on US commandos and allied forces facing scattered bands of violent extremists. In addition, today’s RPAs are still controlled by human operators, even if from remote locations, and make little use, as yet, of AI-powered target-identification and attack systems. **In the future, however, such systems are expected to populate much of any battlespace, replacing humans in many or even most combat functions.** To speed this transformation, the Department of Defense is already spending hundreds of millions of dollars on AI-related research. “We cannot expect success fighting tomorrow’s conflicts with yesterday’s thinking, weapons, or equipment,” Mattis told Congress in April. **To ensure continued military supremacy**, he added, **the Pentagon would have to focus more “investment in technological innovation to increase lethality, including research into advanced autonomous systems, artificial intelligence, and hypersonics.”** Why the sudden emphasis on AI and robotics? It begins, of course, with the astonishing progress made by the tech community—much of it based in Silicon Valley, California—in enhancing AI and applying it to a multitude of functions, including image identification and voice recognition. One of those applications, Alexa Voice Services, is the computer system behind Amazon’s smart speaker that not only can use the Internet to do your bidding but interpret your commands. (“Alexa, play classical music.” “Alexa, tell me today’s weather.” “Alexa, turn the lights on.”) Another is the kind of self-driving vehicle technology that is expected to revolutionize transportation. Artificial Intelligence is an “omni-use” technology, explain analysts at the Congressional Research Service, a non-partisan information agency,“as it has the potential to be integrated into virtually everything.” It’s also a “dual-use” technology in that it can be applied as aptly to military as civilian purposes. Self-driving cars, for instance, rely on specialized algorithms to process data from an array of sensors monitoring traffic conditions and so decide which routes to take, when to change lanes, and so on. The same technology and reconfigured versions of the same algorithms will one day be applied to self-driving tanks set loose on future battlefields. Similarly, someday drone aircraft—without human operators in distant locales—will be capable of scouring a battlefield for designated targets (tanks, radar systems, combatants), determining that something it “sees” is indeed on its target list, and “deciding” to launch a missile at it. **It doesn’t take a particularly nimble brain to realize why Pentagon officials would seek to harness such technology: they think it will give them a significant advantage in future wars.** Any full-scale conflict between the US and China or Russia (or both) would, to say the least, be extraordinarily violent, with possibly hundreds of warships and many thousands of aircraft and armored vehicles all focused in densely packed battlespaces. In such an environment, speed in decision-making, deployment, and engagement will undoubtedly prove a critical asset. **Given future super-smart, precision-guided weaponry, whoever fires first will have a better chance of success, or even survival, than a slower-firing adversary**. Humans can move swiftly in such situations when forced to do so, but future machines will act far more swiftly, while keeping track of more battlefield variables. As General Paul Selva, vice chairman of the Joint Chiefs of Staff, told Congress in 2017, “It is very compelling when one looks at the capabilities that artificial intelligence can bring to the speed and accuracy of command and control and the capabilities that advanced robotics might bring to a complex battlespace, particularly machine-to-machine interaction in space and cyberspace, where speed is of the essence.” **Aside from aiming to exploit AI in the development of its own weaponry, US military officials are intensely aware that their principal adversaries are also pushing ahead in the weaponization of AI and robotics, seeking novel ways to overcome America’s advantages in** conventional weaponry. According to the Congressional Research Service, for instance, China is investing heavily in the development of artificial intelligence and its application to military purposes. Though lacking the tech base of either China or the United States, Russia is similarly rushing the development of AI and robotics. **Any significant Chinese or Russian lead in such emerging technologies that might threaten this country’s military superiority would be** intolerable **to the Pentagon.** Not surprisingly then, in the fashion of past arms races (from the pre-World War I development of battleships to Cold War nuclear weaponry), an “arms race in AI” is now underway, with the US, China, Russia, and other nations (including Britain, Israel, and South Korea) seeking to gain a critical advantage in the weaponization of artificial intelligence and robotics. Pentagon officials regularly cite Chinese advances in AI when seeking congressional funding for their projects, just as Chinese and Russian military officials undoubtedly cite American ones to fund their own pet projects. In true arms race fashion, this dynamic is already accelerating the pace of development and deployment of AI-empowered systems and ensuring their future prominence in warfare.

#### It'll be integrated into conventional warfighting strategies that ensure escalation to full-blow nuclear war

Klare ’18 – is professor emeritus of peace and world-security studies at Hampshire College and senior visiting fellow at the Arms Control Association in Washington, DC (Michael T., “Alexa, Send Nukes”, 12/18/18, The Nation, https://www.thenation.com/article/artificial-intelligence-nuclear-war-alexa/)//CW

Such a **danger arises from the convergence of multiple advances in technology: not just AI and robotics, but the development of** conventional strike capabilities **like hypersonic missiles capable of flying at five or more times the speed of sound, electromagnetic rail guns, and high-energy lasers**. **Such weaponry,** though non-nuclear**, when combined with AI surveillance and target-identification systems, could even attack an enemy’s mobile retaliatory weapons and so threaten to eliminate its ability to launch a response to any nuclear attack**. Given such a “use ‘em or lose ‘em” scenario, any power might be inclined not to wait but to launch its nukes at the first sign of possible attack, or even, fearing loss of control in an uncertain, fast-paced engagement, delegate launch authority to its machines. And once that occurred, **it could prove almost impossible to prevent further escalation.** The question then arises: Would machines make better decisions than humans in such a situation? They certainly are capable of processing vast amounts of information over brief periods of time and weighing the pros and cons of alternative actions in a thoroughly unemotional manner. But machines also make military mistakes and, above all, they lack the ability to reflect on a situation and conclude: Stop this madness. No battle advantage is worth global human annihilation. As Paul Scharre put it in Army of None, a new book on AI and warfare, “Humans are not perfect, but they can empathize with their opponents and see the bigger picture. Unlike humans, autonomous weapons would have no ability to understand the consequences of their actions, no ability to step back from the brink of war.” **So maybe we should think twice about giving some future militarized version of Alexa the power to launch a machine-made Armageddon**.

### 1NC – Racism

#### The epistemology of neurotech is entrenched in racism.

Schleidgen et al. ’20 [Sebastian; regular faculty at Fernuniversität Hagen, Institute of Philosophy, interested in Epistemology, Metaphilosophy, etc.; Orsolya Friedrich; philosopher and physician working as a professor for medical ethics at the FernUniversität in Hagen, main research interests are philosophy of technology, neuroethics, medical ethics; Andreas Wolkenstein; a philosopher working as a research associate at the Institute of Ethics, History and Theory of Medicine (Ludwig Maximilians University Munich; 7-30-2020; "How intelligent neurotechnology can be epistemically unjust. An exploration into the ethics of algorithms"; Taylor & Francis; https://www.tandfonline.com/doi/abs/10.1080/00346764.2021.1979241?journalCode=rrse20; Accessed 7-6-2022; RL]

Conclusion In the previous sections, we presented three epistemic problems that may arise in contexts of using BT and exemplary B-INT, namely: B-INTs do not work properly (due to technical device failures), B-INTs generate justified true beliefs in recipients whereas these beliefs do not constitute knowledge (i.e. these beliefs are Gettier cases), and B-INTs generate knowledge depending on certain purposes of their use. Subsequently, we pointed out several issues of epistemic injustice, which may arise from actuations of these epistemic problems. We mentioned automation bias as one such problem, which becomes even more problematic if its consequences are generalized. Moreover, we discussed the problem behind the belief-forming process that occurs when the origin of one’s knowledge is not, or only accidentally, related to the person or thing one has knowledge of. We called this the requirement of person-oriented knowledge and contrasted it with a consequentialist understanding of applying the concept of knowledge. To illustrate our point, we showed that the personoriented concept of knowledge is violated, among other things, when the police uses racial profiling. Viewed more generally, we argued that whenever decision-making follows a statistical rationale, it is crucial that we add other layers of knowledge-formation rather than merely the statistical numbers (e.g. ethical or historical information). This holds true for racial profiling as well as for statistical inferences that an algorithm might use. Finally, we discussed a shift towards power-relations in which mutual human recognition is replaced by machines which eventually make humans superfluous. It is important to note that by assuming the epistemic point of view we argue that assessing and evaluating algorithms requires much more than the traditional canon of issues (e.g. data protection, privacy). We also wish to emphasize that it is not enough to say that the quality of an algorithm’s outcome depends on the quality of the input. Rather, we hold that even if the outcome is correct, true and one cause for knowledge (i.e. for instance, the algorithm as well as its training data are unbiased and free of any misconceptions), in epistemic terms the user or a third party can still be harmed, either because of potential social consequences of an algorithm forming cases of Gettier beliefs or because of possible consequences resulting from it generating knowledge with regard to a certain purpose. This insight needs to complement non-epistemic evaluations and must guide future work on the ethics of algorithms.

### 1NC – Unethical

#### Neurotechnology has the potential to alter personalities and morality – striking a myriad of ethical concerns.

Müller & Rotter ’17 [Oliver; Heisenberg Professor of Philosophy at the Department of Philosophy, University of Freiburg; Stefan; Professor of Computational Neuroscience, Managing Director, Bernstein Center Freiburg, and Faculty of Biology, University of Freiburg; 12-23-2017; "Neurotechnology: Current Developments and Ethical Issues"; PubMed Central (PMC); https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5733340/; Accessed 7-6-2022; RL]

Neurotechnology raises ethical questions that are associated with what we call our “self” or “soul,” complex philosophical concepts with many presuppositions (Vogeley and Gallagher, 2011). The ethical debate usually draws on the concept of personhood as a “modern” notion that includes core aspects that we typically ascribe to our self or soul (Merkel et al., 2007). These include self-consciousness, responsibility, planning of the individual future, and similar dimensions. In our deliberations, we should first make ourselves aware of the notions of “person” and “personal identity” as fundamental concepts of ethics. Integrity and dignity of a person are the most relevant criteria for the ethical evaluation of technological interventions. The concept of personhood always has normative implications, because we not only describe certain attributes and capabilities of a person, but we want to have them recognized, acknowledged and guaranteed. For example, the principle of “informed consent,” which is so important in clinical practice, refers to the notion of personhood (cf. Beauchamp and Childress, 2008). Patients must consciously authorize a neurotechnological intervention before it is conducted. Along similar lines, the concept of a person can provide an ethical benchmark, assuming that we do not want to impair personal capabilities such as autonomy and responsibility by interventions in the brain. Neurotechnological interventions are ethically not acceptable if remaining a person is at risk. The current practice of neurotechnological interventions is, explicitly and implicitly, orientated toward the concept of personhood.

Yet, the situation is more complicated—as it is so often the case in ethical evaluations (Schermer, 2011). Although a patient typically does remain a person after an intervention in the strict philosophical sense of the term, ~~he or she~~ [they] could be left with an altered personality, with unfamiliar character traits and new or previously subliminal behavioral patterns. Upon the use of DBS in PD patients, an altered personality can be diagnosed in many cases. Some of them are subtle, but they may also be quite severe. We have seen the onset of a depressive disorder that had not existed prior to the intervention. There are cases of disproportionate euphoria occurring in patients, who before DBS onset had been known for their “rational” behavior, but are now inclined to risky financial decisions, for example. What we observe here is not so much an impairment of personhood, but alterations of personality and character traits.

Is the patient's personal identity threatened in these cases? The concept of personal identity refers to the question of to which degree and under which circumstances a person remains the same over time, above and beyond physical identity. Answering this question requires that we develop concepts and provide criteria which allow us to establish the “sameness” of a person over time, a complicated problem that is ethically relevant, however. Not only the interaction with other humans, but also the appreciation of moral capabilities—such as the ability to make a promise and keep it—are firmly rooted in the assumption that we and the others remain “the same” beyond any doubt. In the international debate on this (see Baylis, 2013), there is the tacit assumption that, even in the face of distinct and visible personality changes, personal identity is not compromised. Drawing on concepts of narrative identity we can assume the “sameness” of a person, because human beings experience themselves as being the same though the narrative of their life history. Even the sizeable gaps implicated by illness or a debilitating therapy such as DBS are perceived as an integral part of one's own history, of one's identity. In his book Deep in the Brain, the sociologist Helmut Dubiel elaborated on his personal experience with Parkinson's Disease and DBS (Dubiel, 2009). His struggle to understand the technology in his head, and how it affects his daily life, can be considered an example of how neurotechnology can be integrated in someone's life, his experiential horizon, his self-concept and self-image. Even in such a severe case, personal identity is not put in question at all. Despite all personal distortions and weird experiences, Dubiel remains the same.

Yet, there are also examples where this constancy can no longer be assumed. Medical ethicist Walter Glannon describes the story of a patient who, after having undergone DBS, entered a state of euphoria such that his family could no longer recognize him as the one they knew before (Glannon, 2009a). The patient himself, however, felt very happy in his condition; not only were the negative symptoms of Parkinson's Disease suppressed to a large extent, but also did he just feel “happier” as a result of his stimulation-induced mania. When a decision had to be made as to whether he should be admitted to a mental institution as he could no longer live on his own, several dilemmas became apparent: In which “state” should a person be asked for his informed consent on a treatment? Should the patient be consulted before or after the stimulation in cases like the one reported above? Which of the patient's “states” qualifies him or her as “self-responsible”? But we must also take into account the family environment and the health care system: How much “alienation” must relatives accept? Should society cover the costs for hospitalization?

## Case – Bio-Revolution Advantage

### 1NC – AT: Genetic Warfare

#### Concerns are exaggerated---adversary intent means precision warfare is impossible without backfire

Adam 04 (David Adam | ‘Could you make a genetically targeted weapon?’ | <https://www.theguardian.com/science/2004/oct/28/thisweekssciencequestions.weaponstechnology> | DOA: 7/6/2022 | SAoki)

Others say the concerns are exaggerated. "Trying to find a weapon that affects quite a few of one ethnic group and none of another ethnic group is just not going to happen," says David Goldstein, who studies population genetics at University College London. "Because all groups are quite similar you will never get something that is highly selective. The best you would probably do is something that kills 20% of one group and 28% of another." The groups in question are also far broader than those associated with ethnic conflict. Geneticists can only distinguish between people with ancestry traced to regions such as Europe, Sub-Saharan Africa and East Asia.

### 1NC – AT: REMs

#### No REM scarcity---multiple checks and solutions (inventory supplies, alternative sources, alternative trade partners, recycling, decreased reliance, etc.) solve even worst-case scenarios

Hsu 19 (05/31/2019 | Jeremy Hsu | ‘Don’t Panic about Rare Earth Elements’ | <https://www.scientificamerican.com/article/dont-panic-about-rare-earth-elements/> | DOA: 7/6/2022 | SAoki)

As trade tensions rise between the U.S. and China, rare earth minerals are once again in the political spotlight. Today Chinese mines and processing facilities provide most of the world's supply, and Chinese leader Xi Jinping has hinted about using this as political leverage in trade negotiations with U.S. President Donald Trump's administration. But in the long run, many experts say the global market involving these materials would likely survive even if China completely stopped exporting them. The 17 rare earth elements, which cluster near the bottom of the periodic table, play a vital role in several industries: consumer electronics including Apple AirPods and iPhones, green technologies such as General Electric wind turbines and Tesla electric cars, medical tools including Philips Healthcare scanners, and military hardware such as F-35 jet fighters. The U.S. government lists them among minerals deemed critical to the country's economic and national security, and the Trump administration notably exempted rare earth elements from tariffs it imposed on $300 billion worth of Chinese goods. On the other side of the trade conflict, Xi recently made a politically symbolic visit to one of China's main rare earth mining and processing facilities, and China used tariffs of its own to target a U.S. rare earth mine in California. Such political posturing on both sides, however, may overemphasize the world's reliance on China's supply of rare earth elements. "Politicians get too alarmed or too wrapped up in the idea of political manipulation of markets," says Eugene Gholz, an associate professor of political science at the University of Notre Dame. "There's a big difference between individual companies making or losing money, and the large-scale ability to get political influence in this particular market." The "rare" in the name of this group of elements is actually somewhat misleading; the U.S. Geological Survey describes them as "relatively abundant in the Earth's crust." But extraction is complicated by the fact that in the ground, such elements are jumbled together with many other minerals in different concentrations. The raw ores go through a first round of processing to produce concentrates, which head to another facility where high-purity rare earth elements are isolated. Such facilities perform complex chemical processes that most commonly involve a procedure called solvent extraction, in which the dissolved materials go through hundreds of liquid-containing chambers that separate individual elements or compounds—steps that may be repeated hundreds or even thousands of times. Once purified, they can be processed into oxides, phosphors, metals, alloys and magnets that take advantage of these elements' unique magnetic, luminescent or electrochemical properties. The strong and lightweight nature of rare earth magnets, metals and alloys have made them especially valuable in high-tech products. China currently has most of the world's separation facilities—but if it ever were to stop exporting the purified materials, other options exist. In the short term, U.S. companies that rely on these minerals would likely have inventory stockpiles for brief supply shortages, Gholz says, who served from 2010 to 2012 as senior advisor to the Pentagon's Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy. To stretch those stockpiles out, the overall market could prioritize rare earth elements for crucial applications such as military and medical technologies, while forcing makers of headphones or golf bags to pay more. "I don't think there is an obvious supply gap or hole where someone will not be able to get a Prius or Tesla or whatever they're looking at," Gholz says. In the event of a longer Chinese supply interruption, the U.S. rare earths mine at Mountain Pass, Calif., would likely become the first place to step up production, Gholz explains. The mine's previous owner, Molycorp, spent approximately $1.5 billion building a new separation facility for producing rare earth concentrates. It did not, however, complete the downstream processing needed to produce purified rare earth materials before the company went bankrupt in 2015 because of Chinese competition. The mine's new owner, MP Materials, plans to reactivate and complete the mothballed facility for fresh operation starting in 2020. Another alternative is Australian company Lynas Corp., the world's only significant rare earths producer outside China. It currently operates a mine at Mount Weld in Australia, and sends ores to a separation facility in Malaysia that can purify the rare earth materials—but a complication has arisen from the fact that some ores contain radioactive thorium. Environmental concerns about low-level radioactive waste from the separation facility recently led Lynas to announce it will move some some of the "upstream" processing (which involves the radioactivity) back to Australia, while keeping "downstream" processing in Malaysia. The company has also announced it will work with Texas-based Blue Line Corp. to build a new separation facility in the U.S. for operations starting in 2022 at the earliest. Beyond existing mines, companies that dig for other resources might start extracting rare earth elements from deposits of different materials. For example, the U.S. could someday obtain these elements as byproducts from power plant coal ash and coal mining waste. And radioactive material mixed in with ores could end up being positive: If thorium-based nuclear plants prove viable, expanded thorium mining would also turn up usable rare earth minerals. Researchers have even begun investigating a large concentration of rare earth elements in deep-sea mud from an ocean floor deposit near Japan. Some industries that rely on rare earth elements are going outside the box and looking for ways to bypass mining entirely. After all, such operations in China and elsewhere have significant environmental impacts that can threaten human health in the absence of strict regulation. The presence of radioactive thorium in some ore is one example. In addition, some mining and separation processes involve chemicals that produce toxic wastewater. All of these dangerous byproducts require scrupulous storage and disposal. With China threatening to weaponize its advantage when it comes to rare earth elements, more companies may invest in innovations that could replace these materials with something else. Gholz points to a 2010 incident in which China temporarily cut off Japan from its supply of rare earth elements. Afterward, Japanese automakers such as Toyota and Honda began developing hybrid car motors that greatly reduced or even eliminated rare earth elements, such as terbium and dysprosium, from the powerful magnets used in electric motors. During the 2010 supply scare, other large industries that used rare earth elements also discovered they could do without some of them. Oil refinery operators temporarily stopped using the rare earth element lanthanum, which improves oil refining efficiency, when the price went up. The glassmaking industry largely abandoned using the rare earth element cerium for polishing. Although industries related to national security would be unable to entirely forgo rare earth minerals, Gholz thinks the U.S. military's demand could be "easily satisfied by non-Chinese production" because this need represents less than 5 percent of the total market. In any case, a variety of industries will continue to rely heavily on rare earth minerals. To obtain them without depending on Chinese or U.S. mines, they could recycle those elements already used in products, says Eric Schelter, a professor of chemistry at the University of Pennsylvania, whose research projects include developing new chemical processes for separating rare earth elements from ore. "The appeal here is that there has already been a significant energy input and waste output to purify rare earth elements from their ore materials," he says. "Simply throwing them away is therefore wasteful, considering that in technological devices, they are typically relatively pure compared to their ores." He pointed to many research projects at both academic and government labs: the latter include the U.S. Department of Energy's Critical Materials Institute at the Ames Laboratory and the Oak Ridge National Laboratory. For example, rare earth elements such as neodymium and dysprosium are frequently combined in permanent magnets. To separate them, Schelter's lab has developed chemical processes that can selectively dissolve one rare earth element while the other remains solid. It's a "fast and efficient approach to metals separation," he says, but the cost is currently not competitive with mining. Still, he thinks that could change because the market price of rare earth elements is currently kept "artificially low"—it does not account for the cost of waste treatment and handling during the mining and separation processes. If the recycled versions of these materials were marketed as cleaner alternatives to mined rare earth elements, it might encourage companies seeking a greener image to pay more for them. "Consumers recognize the importance of free trade coffee and consequences of blood diamonds," Schelter says. "It stands to reason that ethical cobalt and clean or recycled rare earth elements can contribute to a more sustainable picture for this industry."

## Case – Brain Cognitive Interfaces Advantage

### 1NC – BCIs fail

#### Doesn’t solve – too many compounding risks

**Klein 5/1** (Eran Klein, Department of Philosophy and Center for Sensorimotor Neural Engineering, University of Washington, Department of Neurology, Oregon Health and Sciences University. Science and Engineering Ethics, "Informed Consent in Implantable BCI Research: Identifying Risks and Exploring Meaning", 5/1/2022, https://link.springer.com/article/10.1007/s11948-015-9712-7, accessed on 6/23/2022)//gideon

Safety risks can be grouped by BCI component: electrodes, power supply, or data processing. Some safety risks associated with each component occur at surgical implantation or device set-up and others occur later in the life of the device (Mak and Wolpaw 2009). As these devices are inducing foreign material into the body, they generate problems of biocompatibility. In addition, the nature of BCI as a rapidly evolving field generates risks associated with available materials but also uncertainties as to device capabilities over time.

Bleeding and infection are known risks of surgical implantation. Limited systematic data exists in BCI, such as bleeding and infection (Mak and Wolpaw 2009). In DBS the perioperative risks of hemorrhage are 2–4 % and of infection 2–6 % (Foley 2015). Less is known about local tissue damage as electrodes are passed through cortical or subcortical tissues (McGie 2013).

Electrodes can undergo tissue encapsulation through formation of a capsule or scar around the electrode by surrounding neurons, or biochemical isolation through inhibition of axonal growth and pulling away of recorded neurons—both of which lead to a degradation in BCI signal quality. If encapsulation leads to decreased fidelity of signal detection, higher levels of stimulation may be required to overcome encapsulation resistance, with resultant tissue damage and spread of stimulation beyond the original field.

Electrodes corrode over time and can be pulled away from target tissue if tethered too firmly to wired processing and power systems (vs. wireless). While there are noted longevity successes of electrodes—for instance, a patient with locked-in syndrome due to ALS retaining 83 % accuracy at 2 years (Sellars 2010) and a subject with brainstem stroke maintaining some control over a robotic limb after 5 years (Hochberg et al. 2012), loss of functioning electrodes over time is a well-known and translation-limiting problem in BCI.

The potential of stimulation to induce neuroplasticity changes in brain signaling is known, but poorly understood, particularly in the case of chronic stimulation (McGie 2013). Most risk-related data on chronic electrocorticography (Ecog) comes from 7 to 10 days of implantation associated with epilepsy surgery monitoring. Theoretical risks of neuroplasticity include lowered seizure thresholds, neoplastic cellular cascades, and disrupted cell signaling through local pH changes.

Advancements in electrode design may lead to obsolescence of implanted electrodes. Early adopters of BCI may be disadvantaged if they require explantation of outmoded technology, such as if power and computation systems are not made backward compatible with “old” electrodes. Early adopters may also be suboptimal candidates for next generation technology. Implant-induced changes in brain chemistry and structure may alter the safety or efficacy profile of, or be an exclusionary criterion for, re-implantation. Early adopter risk in neural engineering research has not received significant attention (Finder 2012).

BCI systems require a source of power and this generates associated safety issues. Some of these issues arise from bringing power to implanted electrodes. Current wired systems, such as battery-powered systems, use wires that pass from outside the skin, through the skull, and into the epidural space, subdural space, or into brain tissue to reach and power electrodes. The tissue interface with the wired system can lead to skin erosion and abnormal bone growth. Standard wired DBS systems require periodic battery replacement (about every 5 years) and attendant surgical risks (Larson 2014).

An optimally efficient wireless transfer of energy minimizes absorption of energy by tissue as it travels from energy source to target. Though Occupational Safety and Health Administration (OSHA) and Federal Communications Commission (FCC) standards exist for safe exposure levels to radio frequency of electromagnetic fields, human safety data on the short and long term effects of frequency and power densities needed for BCI devices is limited.

Processors can be affixed to implanted electrodes or located at a distance from them, such as outside the skin. Just as power must be delivered to electrodes, data must be transported away from electrodes and into a processor. Wired data transmission systems run risks of skin erosion and tissue disruption similar to those of wired power systems, whereas wireless transmission systems sidestep these risks but offer tradeoffs of lower bandwidth and increased data security risks (McGie 2013). Encryption of electrode data at the source can ameliorate wireless security risks, though increase energy and chip size demands.

Given Moore’s law, advancements in the processing power of implanted processors are likely. Should chips be designed to be regularly explanted? Does implanting a chip and designing a system around it, with a currently acceptable set of data speed and energy tradeoffs, put a subject at risk of being excluded from future devices? Trying to anticipate advancements in processing capabilities and making near term sacrifices to accommodate them, has attendant costs.

Individuals who are impaired in any number of ways–owing to depression, anxiety, dementia, traumatic brain injury, or other conditions—may not be able to give informed consent for research participation. Decision-making capacity requires the ability to understand study information, reason about the risks, appreciate the consequences of possible study outcomes, and choose whether or not to enroll (Appelbaum and Grisso 2001). Cognitive impairment has been of particular concern in DBS research. Parkinson’s disease, the most common indication for DBS implantation, is comorbid with dementia in 30 % of patients (Aarsland et al. 2005) and a study of DBS candidates with advanced Parkinson’s disease in one center found over 70 % with cognitive deficits on neuropsychological testing (Costello et al. 2011). As a consequence, cognitive impairment is considered a contraindication to DBS implantation (Lang et al. 2006). Research into DBS as a treatment for depression has raised questions about affective impairment and decision-making, though depression has not been shown to correlate with decisional incapacity in subjects considering enrollment in DBS trial research (Schermer 2011; Skuban et al. 2011).

Cognitive impairment can reduce the capacity to give consent in BCI research (Hochberg and Cochrane 2013). Early research in BCI has focused on motor or sensory impairment, enrolling subjects with conditions like spinal cord injury or ALS. Cognitive impairment can be comorbid with motor or sensory impairments targeted by BCI. For instance, frontotemporal dementia is found in 15 % of patients with ALS (Ringholz et al. 2005) and 30 % of ALS patients exhibit executive dysfunction sufficiently severe to be considered cognitively impaired (Consonni et al. 2013). Traumatic brain injury can causes cognitive impairment that impairs the ability to consent (Johnson-Green 2010). BCI has also been proposed as a treatment for cognitive impairment. Based on preliminary studies of DBS in Alzheimer’s disease, some have speculated that BCI may be a viable approach to treatment of dementia (Liberati et al. 2011). Research in populations with dementia raise well known issues of capacity to consent and re-consent.

Decision-making capacity may be unproblematic at study outset but individuals may become impaired during the course of BCI research. Impairment may result from natural progression of a disease or from device function. For instance, progressive cognitive impairment in epilepsy is common, either due to ongoing seizure activity or due to side effects of antiepileptic medications (Seidenberg et al. 2007). BCI systems for detecting and treating seizures, such as Neuropace, have an expected lifespan of at least 5 years. It is not currently known what percentage of individuals with an implanted BCI seizure-detection system will progress to significant cognitive impairment due to underlying epilepsy, nor are long term cognitive side effects of BCI surgical implantation and chronic stimulation known. Whether neurostimulation can cause or exacerbate cognitive decline, for instance in Parkinson’s disease, is a matter of controversy (Morishita et al. 2014).

Interval development of cognitive impairment in BCI research raises informed consent problems of two sorts. (1) Consent for ongoing participation in research may become void if decision-making capacity becomes sufficiently impaired. Except where otherwise specified, suspected decisional impairment requires re-consent for continued study participation. (2) BCI systems may become less reliable in the setting of cognitive impairment. For instance, a BCI seizure detection system may require that individuals report accurate information back to researchers (“I felt an aura” or “I had 2 seizures last week”) in order to optimize device functioning and provide actionable information to subjects (e.g., “you have a high likelihood of experiencing a seizure within the next 2 min”). Devices that rely on preserved subject cognition may fail to function optimally or may even lead to unsafe situations (e.g., continued driving). Further, BCI systems that invest subjects with cognitive control over device function provide an additional layer of concern. BCI devices may 1 day allow individuals to modulate device activity through thought alone. A BCI that allows an individual to control an essential tremor through formation of motor intentions (e.g., “I want to stop shaking now”) is currently underway (Herron and Chizeck 2014). It is an open question whether patient-controlled BCI devices will work or work safely in the setting of cognitive impairment.

An additional layer of concern attends studies in which a BCI device becomes a way or the only way to assess cognitive impairment. For instance, how well individuals use a BCI over time provides information about various aspects of cognition—attention, concentration, memory, motivation, judgment and so on. A change in patterns of cognitive functioning, as recorded by a device, may signal the onset or progression of a disease, such as dementia. Privileged access to such information generates obligations on the part of BCI researchers to ensure that such relevant “incidental findings” are communicated to subjects in a timely and clinically appropriate manner. Models for communicating incidental findings in neuroscience are in development (Drazin et al. 2013). In populations with impaired communication, like locked-in syndrome (LIS), BCI devices may become the only way to assess for cognitive decline over time (Kübler and Birbaumer 2008). This is particularly important in light of evidence that the progressive loss of communication resulting from LIS may cause cognitive impairment (the “extinction of thought” hypothesis) (Kübler and Birbaumer 2008). A window into a subject’s mental life creates obligations on the part of BCI researchers to develop protocols for ongoing assessment of consent and assent.

Communicative impairment affects the ability to express decisions about BCI research participation (Clausen 2011). As mentioned previously, loss of communication is a feature of some populations targeted by BCI research, such as ALS and LIS. Consent processes in subjects with impaired communication can be demanding and resource intensive, requiring nuance beyond “yes” or “no” questions (Glannon 2014). For subjects enrolling in BCI research after loss of communication abilities—such as advanced ALS, LIS, or individuals in a minimally conscious state (MCS), the problem is stark: can subjects be enrolled in BCI research without their initial consent? If BCI is the only reasonable option for reestablishing communication, can consent be presumed until a subject becomes able to communicate whether or not to continue participating? What would count as sufficient evidence of decision-making capacity in this population? The potential harms of study participation may be significant—brain surgery and physically and emotionally demanding BCI training—but the opportunity cost of life devoid of communication is also a significant harm. Work on ethical guidelines for DBS in disorders of consciousness is a step in the right direction (Patuzzo and Manganotti 2014), but BCI may present additional challenges (e.g., burdens of training) that need to be addressed in this population (Glannon 2014; McCullagh et al. 2014).

#### Don’t fall for the media hype - BCIs don’t work on 30% of people

**Klein 5/1** (Eran Klein, Department of Philosophy and Center for Sensorimotor Neural Engineering, University of Washington, Department of Neurology, Oregon Health and Sciences University. Science and Engineering Ethics, "Informed Consent in Implantable BCI Research: Identifying Risks and Exploring Meaning", 5/1/2022, https://link.springer.com/article/10.1007/s11948-015-9712-7, accessed on 6/23/2022)//gideon

Therapeutic misconception and unrealistic expectations are concerns in BCI as well. The therapeutic misconception is particularly challenging in the absence of a clear research-therapy distinction (Vlek et al. 2012). In the design of most pharmacologic trials, for instance, research intervention parameters are set in advance, often rigidly so (e.g., drug A or drug B or placebo, or drug A at low, medium, or high dose, etc.). With the parameters of an intervention set in advance, it is reasonable for subject expectations of benefit to be dichotomous. “If I get drug A, my cancer may shrink; but if I get placebo, it will likely not.” In BCI trials, however, the intervention can be iterative and largely open-ended. After surgical implantation, device function is optimized over time, often in ways that are not fully codifiable in advance. Leads may fail, more efficient ways to deliver power or extract information may be discovered, or data computation shortcuts may be discovered. Making “technical” adjustments is often unavoidable and may be unethical not to implement. Further, given all that is invested on the part of the subject and the research team, both parties may continue to work and make study adjustments until a beneficial result is achieved. As such, though labeled “research,” a BCI trial shares features of a therapeutic intervention.

Management of expectations is a challenge in BCI research (Haselager et al. 2009; Glannon 2014; Schneider et al. 2012). Physical and emotional investment on the part of subjects is substantial (McGie et al. 2013; Mak and Wolpaw 2009). McCullagh et al. (2014) notes that in participating in a BCI protocol “which may often seem monotonous, the need for sustained attention and/or concentration, and allocating sufficient personal time often for repeated recording sessions, means that BCI investigation is particularly demanding on the motivation of the subject, who may become fatigued or even exasperated by poor achievable results.” More broadly, 15–30 % of subjects fail to use a BCI system effectively, a phenomenon that has been called “BCI illiteracy” (Kubler and Muller 2007). Failure to prepare both subjects and family for the possibility of BCI illiteracy can lead to disappointment.

Current BCI research has as its backdrop the genre of science fiction, from Mary Shelly’s Frankenstein to Star Trek cyborgs. Media portrayals of BCI achievements, such a person with paraplegia grasping a water bottle with a BCI-controlled robotic arm (https://www.youtube.com/watch?v=ogBX18maUiM) or a person with a wearable BCI controlled exoskeleton kicking a soccer ball at the 2014 World Cup (https://www.youtube.com/watch?v=6WO71e0XLqs), raise the floor of expectations for BCI, in part by blurring lines between science fiction and reality. Short videos of BCI successes, whether produced by scientists, news media, industry or others, are easily decontextualized. As has been noted in DBS, video is particularly powerful at elevating expectations (Bell et al. 2010). Left out of view is a background of highly selected subjects, months or years of tedious trial and error training, narrowing of scope around specific tasks, and the opportunity costs of spending substantial scientific and societal resources to make discrete BCI-related tasks possible. It is not surprising that absent this framing context, resultant public expectations are high, and lead to a BCI expectation gap. This has led to a call for fostering relationships between scientists and media that are more conducive to accurate reporting on the current state and future potential of BCI (Haselager et al. 2009). BCI researchers should be mindful that though media coverage of BCI carries a largely positive valence at present, this could change, as is evidenced by the history of psychosurgery (Skuban et al. 2011).

Expectations of subjects as to what happens after study completion are particularly challenging for researchers to address (Schneider et al. 2012). What happens to the subject with an implanted BCI system after study outcomes have been achieved? Do subjects have the option to keep using a system after the study ends if they endorse benefit, or must it be disabled, or even explanted? Who pays for medical care associated with BCI systems after the study ends, say to treat skull bone erosion, or to replace batteries? Who updates software or monitors for malfunctions? The current funding structure of BCI does not uniformly include mechanisms for addressing these questions, and private foundations or other sources are not a sustainable model as BCI research continues to expand. BCI researchers have an obligation to communicate at study onset the uncertainty that currently exists about post-study care and to work during and after study completion to protect subjects from abandonment (Schneider et al. 2012).

### 2NC – BCIs Fail

#### Innovation in BCIs fail---future predictions are impossible and numerous barriers doom effective DoD guidance

Vahle 20 (Mark W. Vahle | ‘OPPORTUNITIES AND IMPLICATIONS OF BRAINCOMPUTER INTERFACE TECHNOLOGY’ | <https://apps.dtic.mil/sti/pdfs/AD1122494.pdf> | DOA: 7/7/2022 | SAoki)

The first step in the projection of any disruptive technology is to understand the limitations of prediction. BCIs and related technology are not limited to one field but represent an interdisciplinary effort as described earlier. This interdisciplinary effort implies that advances in one field tend to influence other areas. Since these areas of study all seem to be growing exponentially, predicting where one domain will be in the next five, 10, or 20 years seems futile. While general technological trends can be extrapolated, the further from the present we get, the larger the uncertainty volume gets and therefore we have less predictability. This is particularly true concerning BCIs because the technology requires huge technological jumps in many different fields. According to its mission statement, DARPA is seeking technologies that create transformational change rather than incremental improvements. Their investments in basic research focus on “moonshot”-type problems, and as a result they often fail. Failure within BCI-related research may lead to massive shifts in technology. Since a large number of technical hurdles have been overcome in the past few years, considerable challenges still exist that may slow, stop, or divert the technology into something completely different from expectations. The next section introduces and describes four challenges that BCIs face. These challenges will guide how the DOD and USAF apply this technology. Technical Hurdles Before projecting where BCI technology may be in coming years and forecasting what is or is not possible, it is essential to understand the technical challenges involved. These technical challenges are not trivial and may significantly alter how the DOD and USAF use technology to enhance our war fighters. First, faulty metaphors and Hollywood hype have influenced our perception of the brain—an actual, complete understanding of the brain and its functions might still be decades away. Second, the body’s immune system responds when subject to a foreign object. Third, achieving high signal resolution—while also ensuring safety with invasive methods—yields engineering challenges, including issues with power consumption, biosecurity, communications methods (wireless or wired), and decoder efficiency. Finally, ethical, social, and legal implications arise with BCI implants. These challenges, while not an all-encompassing list, represent the obstacles that will guide how the USAF and DOD apply these technologies in future efforts. The first challenge highlights how far we have to go to gain a complete understanding of the brain. In the last decade, genetic sequencing technology and new tools for mapping the brain have led to an explosion in neuroscience 9 research. Scientists can now use these tools to map neuronal firing patterns in an attempt to understand how different firing patterns lead to different actions. However, the brain contains between 80 and 100 billion neurons with each neuron having up to 10,000 connections to its surrounding neurons.25 Scientists are still far from understanding the dynamics of the electrochemical interactions between the neurons and how those interactions are translated into memories, behaviors, perceptions, and actions. Often we seek the closest metaphor for the brain, comparing the brain to a digital computer and its subcomponents. While similarities exist (both are designed to process and store information), mechanisms for their processes and are quite different. In reality, when exposed to new experiences, the brain changes in an orderly way based on the existing, unique structure that each person has developed over a lifetime of experiences. Robert Epstein’s article, “The Empty Brain,” states there is no reason to believe that any two of us are changed the same way by the same experience.”26 For example, the firing patterns on the brains of two air battle managers (ABM) learning the same task would be dependent on their past experiences. This complicates the prospect of accurate memory prosthesis or the transferring of knowledge and experience from one person to another. The brain does indeed have a modular design, with certain areas designed for specific functions (i.e., movement planning, movement execution, aggression, attention, and so forth). This indicates that although the brain activity of the two ABMs will not be identical, they will likely be similar. There may be a quasi-transitive property within the brain like in mathematics (i.e., 5 x 6 = 6 x 5), where neurons are arranged differently but retain the same data. The first step in making an informed prediction about the future of BCIs is to temper our expectations. This can be accomplished by taking some time to understand what metaphors are valid and invalid depending on what is being compared. The second challenge to BCIs is the body’s natural immune response when subject to a foreign body. This is particularly important for invasive BCIs that reside under the skin. Invasive BCIs typically use an array of micro-electrodes in direct contact with specific neurons in the brain. Once the body recognizes the electrode as a foreign body, the immune system goes to work much like it would in the case of a splinter. The result is a process called tissue encapsulation, in which the electrode is surrounded by a fibrous capsule of tissue called a glial scar. The Journal of Neuroscience Methods article states the scar’s purpose is believed to be separating “damaged neural tissue from the rest of the body to maintain the blood-brain barrier.”27 This capsule reduces the signal recording ability of the electrodes and sometimes results in the death of the particular neuron, to the point where some BCIs become unusable after a few 10 weeks. Worth noting are many research efforts attempting to solve the biocompatibility problem with tissue-response modifying drugs and advanced material coatings like hydrogels (which mimic soft body tissue).28 However, bodily response represents the most significant challenge to achieving a chronic or long-term BCI in clinical patients. Today’s BCIs are limited to clinical studies under the close care of physicians. The physicians have to not only work fast to gather data as the encapsulation takes place but also strictly monitor the patient for a brain infection. Until the biocompatibility of medical devices is improved, this challenge will likely limit the use of invasive BCIs to clinical populations for the next decade. Therefore, this pushes DOD and USAF near- and medium-term applications toward noninvasive methods. The third challenge facing BCIs is overcoming engineering hurdles to achieve high signal resolution while also ensuring safety with invasive methods. The goal with any BCI is to produce a bidirectional communication with the brain. Often this is done via electrodes interfacing directly with neurons. The objective is to achieve high spatial and temporal resolution with the measurements. This means knowledge of where and when the measurement happened. The more electrodes that interface with the neurons, the higher the amount of data the researcher receives. Three research areas categorize BCIs today. The first is the insertion of an electrode that measures (or excites) a single neuron. Electrode methods are invasive, requiring an operation below the protective layer of skin that surrounds and protects the brain. Electrodes are subject to tissue encapsulation and infection. The second method involves taking measurements from the scalp using electroencephalographic (EEG) activity.29 EEG methods are noninvasive but are typically characterized by low spatial and temporal resolution. The third method measures electrocorticographic (ECoG) activity from the surface of the brain rather than from inserting electrodes. An ECoG-mesh would likely measure populations of neurons firing. This method is also invasive but provides much higher measurement resolution than EEG methods. Additionally, ECoG methods are useful for avoiding some of the body’s immune responses that create limitations for electrode methods. In addition to resolution and safety, BCI engineering challenges also exist in power consumption, biosecurity, communications methods (wireless or wired), and decoder efficiency. Power consumption and biosecurity are fields that sometimes directly compete with each other. Typically medical devices strive for low-power consumption to reduce battery size and prolong device lifespan. However, there is an inverse relationship between power requirements and efficient biosecurity measures, as protecting signals through encryption increases required computations, driving 11 the power consumption up. Wireless communication methods are preferred over wired to reduce the chance of infection; however, they have their range limitations as the body is an excellent absorber of electromagnetic radiation. Decoders are also a significant engineering challenge, designed to accomplish the analyze and translate function of a BCI. This is because the brain is inherently plastic, meaning it can modify its structure and rewire itself as we age. As a result, the ability of a decoder to decipher the intent of neuronal firing patterns will degrade as the brain rewires.30 The decoder needs to be able to understand and adapt to changes in the brain for the translate function to work correctly. Otherwise, the decoder would need to be retrained. These challenges are likely to be overcome as new methods for low-power biosecurity and decoding brain signals are developed. Additionally, advances in big data analytics and AI will help assist bringing BCIs closer to reality.

#### Don’t trust their authors---they manipulate and overhype the truth of BCI innovation for attention to downplay the risks---you should inflate the internal links to all our case turns to compensate

Pham and Gilbert 21 (Christopher Pham and Frederic Gilbert | Christopher Pham is an associate in the Silicon Valley office of Latham & Watkins and represents emerging companies and venture capital firms in growth industries, including technology and life sciences | Dr. Frederic Gilbert focuses on bio-ethics. He is an expert in neuro-ethics and grapples with the ethical questions posed by invasive brain technologies | ‘Predicting the future of brain-computer interface technologies: the risky business of irresponsible speculation in news media’ | <https://www.researchgate.net/profile/Frederic-Gilbert-2/publication/348611829_Predicting_the_future_of_brain-computer_interface_technologies_the_risky_business_of_irresponsible_speculation_in_news_media/links/60077de292851c13fe239cae/Predicting-the-future-of-brain-computer-interface-technologies-the-risky-business-of-irresponsible-speculation-in-news-media.pdf> | DOA: 7/7/2022 | SAoki) \*we don’t endorse ableist language

What is clear, however, is that the media bears significant responsibility to publish appropriately balanced and accurate information for its potential impact on BCI end-users. Editors and publishers are therefore obligated to maintain the truth and integrity of their reporting on BCI technology (as well as in general) [22, 32]. Multiple journalist organizations2 cite among their agreed-on principles of ethical and responsible journalism the principles of truthfulness and accuracy [44-47]. We argue that truthfulness with respect to reporting on BCIs includes acknowledgement of their limitations as well as strengths, and accuracy includes thorough analysis of the technology’s current state of the art and issues related to it. Our analysis indicates that the current state of BCI reporting in the media does not uphold these values and obligations, as evidenced by (among other things) the lack of ethics and risk analysis and the large body of articles (25.3%) discussing the technology in overly positive and unrealistic ways not supported by research (Tables 1b and 2b) [29]. These articles depicting extraordinary and fanciful future uses of BCIs are indicative of a feature of media publishing that warrants attention. When it comes to science media and reporting on BCIs, we are unfortunately observing narratives rooted (to borrow the words of Harry Frankfurt) in bullshit. Bullshit (BS from here on), to Frankfurt, does not consist of deliberate falsehoods or lies. Instead, it involves (somewhat reckless) manipulations of elements of the truth of a subject in order to fake the appearance of authority on a subject, to the end of satisfying a personal agenda [48]. The ethical problem with BS is that it is designed to persuade the public of a particular point of view [25], rather than adhering to principles of journalistic integrity and fulfil obligations to educate the public [32, 33, What we see in our sample is a large number of articles that make enthusiastic claims that are large extrapolations on what is or may technically be possible for BCIs while ignoring or skewing other important facts, or claims whose feasibility may never be verifiable or falsifiable (as with press coverage of one Russian billionaire, Dmitry Itskov, promising to use BCI technology to grant humans immortality by the year 2045 or using BCIs to sense the environment of Mars while in Brazil, Table 2b). Additionally, these articles more frequently make bold predictions that are more likely to fail – for example the quote about restoring normal motor function to ~~paralysed~~ individuals within five years, a claim made in 2007 that has gone unfulfilled (see Table 2a and 2b for example quotes). The predictions made by these articles are especially problematic because they can seriously distort perception of what is or will be possible with BCIs, while also giving little to no information on associated risk. Because of the positive bent of these articles, this distortion could be coupled with unwarranted inflation of end-user hopes [24, 38, 39]; these hopes could be shattered should predictions fail. Frankfurt’s point about personal agendas motivating such BS is key – it has been suggested that stories like in these overly positive articles (and positive narratives in general) get spread in news media so prolifically because editors view them as particularly newsworthy [25]. In other words, the personal agenda behind engagement in oversimplified “biofantasies” surrounding BCIs is to sell a story, which is aided by the speculation and opinion of the writer. This idea is supported by the fact that on the rare occasions where actual participants in BCI clinical trials were interviewed, the positive aspects of their experiences were emphasized (Table 2b). There was a lack of follow-up reporting on these individuals after the end of their clinical trials, potentially eclipsing any difficulties involved with transitioning back to life without BCIs [36]. The motives behind these cases of BS are not necessarily malicious – that is, the goal of these journalists is not necessarily to intentionally spread misinformation. Nonetheless, they partake in BS since they often neglect to include critical information to balance the positive narratives when they ought to. On the other hand, positive narratives can be good so as to prevent unwarranted fear from developing around BCIs. This presents a serious moral dilemma: how can the media publish successful stories on BCIs and other biotechnology that are newsworthy, align with core journalistic principles, and at the same time be considerate of the many issues facing the technology and its end-users, while minimally contributing to BS and biofantasy? No system is currently in place to maintain accountability to such an ideal standard of reporting, and it remains unclear what it would take to achieve this [36], but it is plain what we have at stake: what do physicians and researchers do if they have to tell prospective BCI end-users that the technology cannot do what they think it will?

#### Models fail

Singh et al. 17 (Balbir Singh | Mayu Ichiki | Guangyi Ai | Hiroaki Wagatsuma | AN EFFECTIVE LIFTING SCHEME METHOD FOR EEG DECOMPOSITION IN TARGETED FREQUENCY RANGE | <https://web.archive.org/web/20220226094127id_/http://www.icicel.org/ell/contents/2017/1/el-11-01-09.pdf> | DOA: 7/7/2022 | SAoki)

The brain-computer interface (BCI) has been associated with the EEG signal features and system. The extraction of EEG features is necessary to provide valuable information to the automated and semi-automated systems, which helps in many applications on a real-time basis. It is also very popular for brain activities tool for clinical purpose and used for military medicine, advancements in biometric fields. The electrical brain activity can be inferred from different regions, different physiological and pathological brain states by placing electrodes on the surface of the scalp [1]. The potential measured from electrodes are used to classify the brain activity. They are represented by highly complex, non-stationary and nonlinear biological systems. The separation of a signal into their components is a great interest in these applications. The linear and nonlinear EEG signal processing methods would be used to distinguish or predict these brain activities. Therefore, time-frequency methods show the promising result [2]. The signal feature extraction methods use linear analysis in time-frequency domains such as fast Fourier transform (FFT), discrete wavelet transform (DWT), and eigenvectors [3]. The nonlinear methods such as principal component analysis (PCA), independent component analysis (ICA), and blind source separation (BSS) [4] have been studied to extract the target components from the raw EEG signals. Wavelets, PCA and ICA are still hot topics for the decomposition but still have limitations. PCA and ICA based methods are used to decompose the recorded data as off-line analysis. It also depended on the independence of signals, while the sparsity is recently highlighted and this concepts effectively provide a representation in the linear analysis to be treated as mixed signals. Wavelet based approaches have high expectations for online EEG signal decomposition with less computational costs and preserve time-frequency characteristics in the raw EEG signal to a maximum extent. The design of wavelet function has a set of restrictions to decomposition of raw EEG signal accurately [3, 5]. Shifts and dilation of a mother wavelet function has generated a series of orthogonal spaces. However, wavelets have been used to analyze the EEG signals both in frequency and time domain at a different level. The wavelets analysis has multi-resolution capability benefit over Fourier transform and cosine transform. The different families (Daubechies, Coiflets, and Symlets) in discrete variant have been used for classification of feature components [6, 7]. The wavelet function design has a complex issue, working with wavelet transform. The speed and accuracy of feature extractions from EEG signals are the critical issues in many applications and wavelet as temporal-spectral analysis of EEG method has been discussed as a solution for unstable signals if the mother wavelet has not introduced appropriately. The wavelet function does not categorize the EEG signal features accurately. Without accurate models, the nonlinear biological system applications of classical parametric and nonparametric signal processing methods based on stationary assumptions often fail to provide satisfactory results. The conventional convolution based implementation of the DWT has high computational complexity and memory requirements

### 1NC – No Impact to BCIs

#### Their applications of BCI are neuroscience theater – its only role is medical

**Regalado 20** (Antonio Regalado, the senior editor for biomedicine for MIT Technology Review. MIT Technology Review, "Elon Musk’s Neuralink is neuroscience theater", 8/30/2020, https://www.technologyreview.com/2020/08/30/1007786/elon-musks-neuralink-demo-update-neuroscience-theater/, accessed on 6/30/2022)//gideon

Rock-climb without fear. Play a symphony in your head. See radar with superhuman vision. Discover the nature of consciousness. Cure blindness, paralysis, deafness, and mental illness. Those are just a few of the applications that Elon Musk and employees at his four-year-old neuroscience company Neuralink believe electronic brain-computer interfaces will one day bring about. None of these advances are close at hand, and some are unlikely to ever come about. But in a “product update” streamed over YouTube on Friday, Musk, also the founder of SpaceX and Tesla Motors, joined staffers wearing black masks to discuss the company’s work toward an affordable, reliable brain implant that Musk believes billions of consumers will clamor for in the future. “In a lot of ways,” Musk said, “It’s kind of like a Fitbit in your skull, with tiny wires.” Although the online event was described as a product demonstration, there is as yet nothing that anyone can buy or use from Neuralink. (This is for the best, since most of the company’s medical claims remain highly speculative.) It is, however, engineering a super-dense electrode technology that is being tested on animals. Neuralink isn’t the first to believe that brain implants could extend or restore human capabilities. Researchers began placing probes in the brains of paralyzed people in the late 1990s in order to show that signals could let them move robot arms or computer cursors. And mice with visual implants really can perceive infrared rays. Building on that work, Neuralink says it hopes to further develop such brain-computer interfaces (or BCIs) to the point where one can be installed in a doctor’s office in under an hour. “This actually does work,” Musk said of people who have controlled computers with brain signals. “It’s just not something the average person can use effectively.” Throughout the event, Musk deftly avoided giving timelines or committing to schedules on questions such as when Neuralink’s system might be tested in human subjects. As yet, four years after its formation, Neuralink has provided no evidence that it can (or has even tried to) treat depression, insomnia, or a dozen other diseases that Musk mentioned in a slide. One difficulty ahead of the company is perfecting microwires that can survive the “corrosive” context of a living brain for a decade. That problem alone could take years to solve. The primary objective of the streamed demo, instead, was to stir excitement, recruit engineers to the company (which already employs about 100 people), and build the kind of fan base that has cheered on Musk’s other ventures and has helped propel the gravity-defying stock price of electric-car maker Tesla. In tweets leading up to the event, Musk had promised fans a mind-blowing demonstration of neurons firing inside a living brain—though he didn’t say of what species. Minutes into the livestream, assistants drew a black curtain to reveal three small pigs in fenced enclosures; these were the subjects of the company’s implant experiments. The brain of one pig contained an implant, and hidden speakers briefly chimed out ringtones that Musk said were recordings of the animal’s neurons firing in real time. For those awaiting the “matrix in the matrix,” as Musk had hinted on Twitter, the cute-animal interlude was not exactly what they hoped for. To neuroscientists, it was nothing new; in their labs the buzz and crackle of electrical impulses recorded from animal brains (and some human ones) has been heard for decades. A year ago, Neuralink presented a sewing-machine robot able to plunge a thousand ultra-fine electrodes into a rodent’s brain. These probes are what measure the electrical signals emitted by neurons; the speed and patterns of those signals are ultimately a basis for movement, thoughts, and recall of memories. In the new livestream, Musk appeared beside an updated prototype of the sewing robot encased within a smooth, white plastic helmet. Into such surgical headgear, Musk believes, billions of consumers will one day willingly place their heads, submitting as an automated saw carves out a circle of bone and a robot threads electronics into their brains. The futuristic casing was created by the industrial design firm Woke Studio, in Vancouver. Its lead designer, Afshin Mehin, says he strived to make something “clean, modern, but still friendly-feeling” for what would be voluntary brain surgery with inevitable risks. To neuroscientists, the most intriguing development shown Friday may have been what Musk called “the link,” a silver-dollar-sized disk containing computer chips, which compresses and then wirelessly transmits signals recorded from the electrodes. The link is about as thick as the human skull, and Musk said it could plop neatly onto the surface of the brain through a drill hole that could then be sealed with superglue. “I could have a Neuralink right now and you wouldn’t know it,” Musk said. The link can be charged wirelessly via an induction coil, and Musk suggested that people in the future would plug in before they go to sleep to power up their implants. He thinks an implant also needs to be easy to install and remove, so that people can get new ones as technology improves. You wouldn’t want to be stuck with version 1.0 of a brain implant forever. Outdated neural hardware left behind in people’s bodies is a real problem already encountered by research subjects. The implant Neuralink is testing on its pigs has 1,000 channels and is likely to read from a similar number of neurons. Musk says his goal to increase that by a factor of “100, then 1,000, then, 10,000” to read more completely from the brain. Such exponential goals for the technology don’t necessarily address specific medical needs. Although Musk claims implants “could solve paralysis, blindness, hearing,” as often what is missing isn’t 10 times as many electrodes, but scientific knowledge about what electrochemical imbalance creates, say, depression in the first place. Despite the long list of medical applications Musk presented, Neuralink didn’t show it’s ready to commit to any one of them. During the event, the company did not disclose plans to start a clinical trial, a surprise to those who believed that would be its next logical step. A neurosurgeon who works with the company, Matthew MacDougall, did say the company was considering trying the implant on paralyzed people—for instance, to allow them to type on a computer, or form words. Musk went further: “I think long-term you can restore someone full body motion.” It is unclear how serious the company is about treating disease at all. Musk continually drifted away from medicine and back to a much more futuristic “general population device,” which he called the company’s “overall” aim. He believes that people should connect directly to computers in order to keep pace with artificial intelligence. “On a species level, it’s important to figure out how we coexist with advanced AI, achieving some AI symbiosis,” he said, “such that the future of world is controlled by the combined will of the people of the earth. That might be the most important thing that a device like this achieves.” How brain implants would bring about such a collective world electronic mind, Musk did not say. Maybe in the next update.

#### All of their claims are bogus

**Kahn et al. 2/22** (\*Jeremy Kahn, \*\*Jonathan Vanian, and \*\*\*Mahnoor Khan, \*a senior writer focused on artificial intelligence and other disruptive technologies, including quantum computing; He holds degrees from the University of Pennsylvania and the London School of Economics. \*\*a neuroscience reporter at Fortune. \*\*\*a reporter at Fortune. Fortune, "Elon Musk claims Neuralink’s brain implants will ‘save’ memories like photos and help paraplegics walk again. Here’s a reality check", 2/22/2022, https://fortune.com/2022/02/22/elon-musk-neuralink-brain-implant-claims/, accessed on 6/30/2022)//gideon

Elon Musk has a knack for accomplishing feats that others consider improbable. From blasting rockets into space to becoming the king of the EV industry, Musk is determined to make history. His latest passion project is Neuralink—a company that is developing a brain implant that will link the human brain directly to computers. He claims this brain-computer interface (BCI) will enable humans to carry out actions through thought alone. One of Musk’s first goals: helping paraplegics regain their independence. But it doesn’t stop there. The company’s technology, Musk hopes, will one day not only treat but cure brain disorders and even save memories so people can revisit them like photo albums. Helping paraplegics walk and curing brain disorders are certainly noble goals. And, hey, ordering a pizza just by thinking about it sounds cool. But many experts are concerned that Musk is seriously overhyping what Neuralink’s implants will be able to accomplish. “Unlike Tesla or SpaceX, we are not talking about technological problems or infrastructure problems. These are fundamental science problems,” Christof Koch, a researcher at the Allen Institute for Brain Science, told Fortune in a recent magazine feature. Here, Fortune tackles Musk’s biggest claims about what Neuralink’s brain implant can do: 1. Neuralink’s brain implant will save us from A.I. annihilation “Even in a benign A.I. scenario, we will be left behind. But with a brain-machine interface, we can actually go along for the ride,” says Musk. First off, the kind of superintelligence Musk is afraid of remains science fiction, with computer scientists divided on when, and even whether, it will ever arrive. Many think it is at least a few decades off. Secondly, Musk envisions his brain-computer interface as a two-way communication mechanism, so even if Neuralink succeeds in delivering on Musk’s grand vision, its brain implants could just as easily be used by superintelligent machines to control humans as they could be a means for humans to ensure their dominance over superintelligent machines. And either way, the technological advances necessary to enable that kind of high-bandwidth brain-computer mind-meld are also years, if not decades, away. 2. The BCI will restore mobility for people with spinal cord injuries In April 2020, a team of researchers reported that they had successfully restored sensation to the hand of a research participant with a severe spinal cord injury using a BCI system. We think that Musk’s claim of restoring mobility with a BCI is well within reach. But questions remain about how much functionality such systems will be able to produce and how easy it will be for patients to learn to use them. Questions also remain about the longer-term safety of having implants in the human brain. 3. The BCI will treat neurological conditions like Parkinson’s disease There is current technology such as deep brain stimulation that can already do some of this. Neuralink could potentially further advance on these treatments. But the current configuration of the Neuralink device, which has electrodes implanted close to the surface of the outer layer of the brain, known as the cortex, is not set up to conduct deep brain stimulation. 4. The brain chip will give superhuman abilities to able-bodied people While it might allow able-bodied people to type or play a video game through thought alone, scientists still don’t know how to interpret brain activity associated with more complex, conceptual thoughts. What’s more, it’s not clear medical regulators will allow able-bodied individuals to have chips implanted, as the risks of the implants and the surgery to implant them might be hard to justify. 5. They will be able to insert the brain chip in less than an hour without general anesthesia Each of the 64 threads that carry electrodes for monitoring brain activity is much thinner than even the finest human hair. These electrodes feed into the Link device itself, which is about the diameter of a quarter and about five times as thick and sits in a hole drilled into the skull. The brain itself has no pain receptors, and brain surgery is already often carried out under local anesthesia. So it is possible Neuralink will be able to deliver on this promise. However, the surgical robot it plans to use to implant its BCI has not yet been proved in clinical testing, and there could certainly be risks associated with drilling into the skull and bleeding during electrode implantation.

### 1NC – Hacking Turn

#### BCIs will be hacked by Russia and China

**Binnendijk et al. 20** (Anika Binnendijk, Timothy Marler, and Elizabeth Bartels, a political scientist at the RAND Corporation, where she currently focuses on national security decision-making, European defense, gray zone challenges, future defense technologies, and national resilience, the State Department’s Office of Policy Planning, where she was responsible for advising the secretary of state on policy questions related to Russia, Ukraine, Turkey, the Caucasus, and NATO, she served for a rotation as director for Russia at the National Security Council, PhD from Tufts University. Rand Corporation, "Brain-Computer Interfaces: U.S. Military Applications and Implications", 2020, https://www.rand.org/content/dam/rand/pubs/research\_reports/RR2900/RR2996/RAND\_RR2996.pdf, accessed on 6/23/2022)//gideon

Adversary Access to New Information In addition to the risk of having signals jammed, there is a risk of adversaries intercepting and using signals. Technologies that provide access to an operator’s emotional or cognitive states could potentially be a treasure trove for adversary intelligence collection. Russia has reportedly targeted NATO soldier smartphones for information on operations and troop strength, while the Chinese government has reportedly hacked military contractor computers to extract highly sensitive data about future submarine warfare.120 BCI technologies that permit direct access to the brains of service members could plausibly provide near-peer competitors with valuable information regarding the U.S. disposition of forces, organizational frictions, and vulnerabilities among individual service members themselves. The degree of vulnerability of operators’ brains would likely depend on the fidelity of the BCI technology employed, the amount of sensitive information that operators had access to, and the robustness of physical and behavior countermeasures designed to thwart adversary hacking attempts. New Areas of Exposure to Harm or Influence Red team participants noted that because BCI technologies may directly connect to an operator’s brain, they may present new areas of potential exploitation. Physical vulnerabilities would likely be most acute with the invasive variant of the technology. Already, unconventional attacks are suspected of causing traumatic brain injuries to U.S. government employees in China and Cuba.121 If adversaries are currently experimenting with disrupting the human brain at a distance using ultrasonic frequencies, microwaves, or other methods, implants could provide direct entry into the brain for damage. Just as it is possible to hack a pacemaker or insulin pump, it is quite conceivable—albeit far in the future—that someone could hack a BCI and send cognitive commands or even thoughts to the brain.122 Reports of Russian pinpoint propaganda, text messages that seek to demoralize individual Ukrainian soldiers through threats and false reports of leadership desertion, offer one insight into how technology can enhance emotional manipulation tactics.123 Hacking BCI capabilities could theoretically provide adversaries with direct pathways into the emotional and cognitive centers of operators’ brains to sow confusion or emotional distress. In the extreme, adversary hacking into BCI devices that influence the motor cortex of human operators could theoretically send false directions or elicit unintended actions, such as friendly fire, although such influence may be technically difficult to achieve in the near term. Even an attack that broadly degraded gross motor skills could prove debilitating during combat.

#### Unsecured BCIs allow hackers to hijack bodies

**Greenbaum 19** (Dov Greenbaum, the creator and Director of the Zvi Meitar Institute for Legal Implications of Emerging Technologies, PhD Yale University. Cambridge Quarterly of Healthcare Ethics, "Cyberbiosecurity: An Emerging Field that has Ethical Implications for Clinical Neuroscience", 5/1/2019, https://www-cambridge-org.proxy.lib.umich.edu/core/journals/cambridge-quarterly-of-healthcare-ethics/article/cyberbiosecurity-an-emerging-field-that-has-ethical-implications-for-clinical-neuroscience/CC7EC0FCE5A7E1495E74A0B10BF9DDD5, accessed on 6/26/2022)//gideon

Research exploring the merging of man and machine via brain machine interfaces, or BCIs (brain computer interfaces) has been advancing for decades.Footnote 15 The various iterations of the technologies can allow for multi-directional communication between the brain and one or more devices by way of software and hardware. The technology has long raised ethical concerns related to a myriad of issues ranging from questioning free-will to human enhancement.Footnote 16 , Footnote17 , Footnote18 However, BCIs can also raise additional ethical concerns as they become subject to biocybersecurity threats. Although current technology does not easily allow for decoding and assigning meaning to the electrical impulses collected by these machines, especially out of context, there are efforts that aim to enable tools like artificial intelligence (AI) to decode the information, even extracting passable images from the signals received from the brain.Footnote 19 Those signals, if intercepted could become privacy concerns for the individual who generated them, even being used to infer cognitive abilities and personality traits of the users.Footnote 20 Data from BCIs can reflect on the user’s physical health, cognition, and mental health.Footnote 21 Those signals could also be used to access things that are unlocked via emerging brainwave biometrics.Footnote 22 , Footnote23 The data can also be employed to understand the decision making processes of individuals; such an understanding, if misappropriated could be employed and exploited to that individual’s detriment. BCIs provide additional concerns given their extensive usage in a multitude of different settings, each setting creating their own biocybersecurity concerns. They are used professionally in clinical care, in neuroscience research, and even in the home for both medical and recreational usesFootnote 24. Regardless of the setting of its use, however, there is a need to provide cyber protection for each element of the process connecting the human mind to a machine. These processes at risk include signal acquisition from the brain, preprocessing of the signal, extraction of features from the signal, classification and translation of the signal, and even user feedback after examining the output. The risks of ethical concerns are exacerbated by the reality that the data are often not encrypted as they pass between various software and hardware devices—sometimes wired, and sometimes wirelessly—opening up the system to increasing threats. Even if the mostly unintelligible data within these devices does not impinge on the ultimate privacy of the individual, as per current conventional wisdom, the data are still per se the property of the user, and the taking of the data could be an ethical, if not legal misappropriation of the user’s property. In general, the hacking of these systems can have repercussions regarding the integrity and usability of the device, data can be altered both incoming and outgoing, artificial information or noise can be added, and privacy of the user’s data can be impinged. Even the ultimate safety of the user and those around herFootnote 25: BCIs are often attached to devices such as prostheticsFootnote 26 and rehabilitative exoskeletons.Footnote 27 If the interface becomes compromised via a hack, either through inserted malicious code, or over the air via unsecured wireless transmission between the BCI and the device, a hacker could take control of the device, even committing a crime. It would be difficult to prove that the crime was committed by a hack and not by the owner of the prosthetic.Footnote 28 Not only are the hardware devices often problematic vis-à-vis cyber protection, but the underlying software is often opensource and potentially untrustworthy. That code can create further concerns. Increasingly, BCIs are incorporating AI into the analysis of the harvested neural signals. The complexity of AI, especially the somewhat opacity of AI decisions, and their sometimes-unexpected results, provide additional opportunities for hackers to conceal malicious code within the BCI software. That malicious code could hijack, change, or obfuscate the neural signals collected by the BCIs.

#### BCIs and AI can be exploited - extinction

**Ailman 17** (Nadisha-Marie Ailman, transdisciplinary analyst, autistic systemizer, philosopher, security artist, cyborgnetician, information theoretician, crypto-lyricist, hyperlexic poet, cyborgnetic painter, illustrator and curator. Postdoctoral researcher at Utrecht University. PhD in Computer Science with a transdisciplinary thesis on "Hybrid Cognitive-Affective Strategies for AI Safety". International Conference on Artificial General Intelligence, "Malevolent Cyborgization", 07/15/2017, https://link-springer-com.proxy.lib.umich.edu/chapter/10.1007/978-3-319-63703-7\_18, accessed on 6/26/2022)//gideon \* = Edited for Language

In their paper titled “Unethical Research: How to Create a Malevolent Artificial Intelligence”, Pistono and Yampolskiy (2016) described possible developments towards a future unethical AI. The authors argue that, unlike in the domain of cybersecurity, where a certain balance is ensured by a research concept covering both potential malicious exploits and measures to maintain safety, AI Safety researchers so far only focused on the general conditions of implementing safe AI systems, while possible malicious exploits on such remained disregarded. According to them, the lack of information resulting out of it should be resolved, since the consequences of an intentional malicious exploit on superintelligent AI systems in the future could be devastating for humanity. In our opinion these claims are accurate for the following reasons: first the previous publications in the field of AI safety before, predominantly contained considerations on how to design safe AIs and a deeper differentiated analysis was missing, although there is no reason why malicious exploits should not be performed intentionally alike on AI systems, since the same principle of taking advantage of security holes in cybersecurity can be transferred to AIs as being software/hardware entities. Secondly, the level of intelligence of AIs steadily increases, it is to be expected that superintelligence will be reached in the not so far future (Bostrom 2014; Chalmers 2010) and an intentionally crafted attack especially using a superintelligent system would imply unforeseen and unintelligible effects for human experts whose minds are going to be overcharged or too slow to counteract. A type of “Hazardous Intelligent Software” may even stay undetected a long time because of the gap of intelligence – just like monkeys cannot comprehend complex human behavior patterns. It will therefore offer exceptionally much power to the attacker to harm humans and as stated in the paper, it is known in history that “absolute power corrupts absolutely”.

The authors described a variety of reasons why several stakeholders like military, governments, corporations, \*malicious individuals or even AI Safety researchers with unethical intentions could intend to implement a MAI ranking from acquiring control and dominance, gaining financial benefits, to initiating the extinction of \*humanity among other things. In any case, there is a kind of cooperation between a human entity and an artificial one to achieve an unethical objective, whereby mostly the human entity initiates the cooperation with a malicious intent. Our view is that the intensity of such an alarming human-machine cooperation could be much higher in the future, since – according to the foreseeable scientific progress in fields like Bionics, Nanorobotics or Brain-Computer Interfaces (BCI) research – it could be possible to merge human and intelligent artificial entities to obtain a hybrid system with an enhanced cognitive performance, which could be used to follow similar unethical objectives as mentioned earlier and would concern the same stakeholders. For instance, \*malicious individuals could as well maliciously intend to merge with an AI entity to become more intelligent or get greater knowledge than their fellow men and in doing so, to be able to manipulate and control others on a large scale or the military could encourage cyborgization techniques to be able to deploy cyborg armies in wars wiping out opponents through intellectual, strategical or/and possibly physical superiority. In this paper, we analyze the concept of a human-machine intelligence merger with intentional malice in design which we call Malevolent Cyborgization, and relate it to the MAI concept introduced by Pistono and Yampolskiy.

### 1NC – Military Turn

#### BCIs undermine military leadership and cohesion

**Binnendijk et al. 20** (Anika Binnendijk, Timothy Marler, and Elizabeth Bartels, a political scientist at the RAND Corporation, where she currently focuses on national security decision-making, European defense, gray zone challenges, future defense technologies, and national resilience, the State Department’s Office of Policy Planning, where she was responsible for advising the secretary of state on policy questions related to Russia, Ukraine, Turkey, the Caucasus, and NATO, she served for a rotation as director for Russia at the National Security Council, PhD from Tufts University. Rand Corporation, "Brain-Computer Interfaces: U.S. Military Applications and Implications", 2020, https://www.rand.org/content/dam/rand/pubs/research\_reports/RR2900/RR2996/RAND\_RR2996.pdf, accessed on 6/23/2022)//gideon

As humans become more closely intertwined with machines through BCI, technology could have profound implications for the interpersonal relationships that have traditionally played a preeminent role in warfighting. The implications may be difficult to predict. On the one hand, an ability to directly sense the thoughts and emotions of other members of a combat team could increase unit cohesion. On the other, there is evidence that advances in virtual communication technologies that permit “chat-room coordinated strikes” may already reduce emotional and psychological bonds among soldiers.128 To the extent that they would replace traditional interactions among members of a military unit, future BCI capabilities could fundamentally alter the nature of these human relationships. An increasing use of robotics and AI in combat could compound this challenge. In fact, preliminary research on robots on the battlefield has indicated the development of strong human-robot attachment, or even a feeling of “self-extension into the robot,” that might influence operational decisionmaking.129 More broadly, the introduction of new BCI technologies raises questions about the future structure of the human force. What does a company or platoon look like when some or all of the force is neurally plugged into various weapon systems, drones, or robots? Will these capabilities be integrated, or will they be assigned to specialized detachments? How might it affect unit cohesion when senior officers can monitor service members’ emotions or even thoughts, and when some unit members have access to BCI capabilities while others do not? Erosion of Unit Leadership Technologies that permit senior officers to monitor and communicate directly with the brains of combat personnel could potentially undermine effective squad-level leadership, extending micromanagement to new frontiers. In one hypothetical dynamic, BCI technologies could exacerbate an existing trend toward what has been dubbed the tactical general: Senior officers, empowered through such new technologies as drone feeds, may tend to use these technologies to exert greater control over operators in the field.130 Future BCI technologies that permit direct brain-to-brain communication could potentially exacerbate this dynamic, contributing to a more robotic, less adaptive and resilient approach to unit-level leadership. Unit-level leadership could also be jeopardized by BCI technologies that provide senior leadership with access to individuals’ physiological, emotional, and cognitive states. Traditionally, it has been the role of a squad leader to understand the physical and emotional states of his or her team through months of relationships, evaluation, training, and combat experience. Technologies that allowed senior officers to bypass unit-level leaders and second-guess their judgments might be undermining unit leadership rather than supporting it.

### 1NC – China Not Revisionist

#### China is not revisionist – the aff is a preventative measure that starts conflict.

**Can and Chan 3/3** (\*Ciwan M. Can and \*\*Anson Chan, \*PhD in international relations, \*\*Former Chief Secretary for Administration of Hong Kong. Journal of Asian Security and International Affairs, "Preventive or Revisionist Challenge During Power Transition? The Case of China–USA Strategic Competition", 3/3/2022, 2022;9(1):7-25. doi:10.1177/23477970221076646, accessed on 6/22/2022)//gideon

All things being equal, China is portrayed as a revisionist threat to the USA and the existing international order (Layne, 2020), it is a new ‘communist rival’ that ‘seek global influence’ and will inevitably seek to challenge the position of the USA and revise the existing international order (Westad, 2019, p. 87). China will, furthermore, most likely ‘present a stronger ideological challenge than the Soviet Union did’ (Campbell & Sullivan, 2019). In Thucydides’ famous historical account of the Peloponnesian War, we are told that it was the rise of Athens and the fear this fuelled in Sparta that led to the outbreak of the conflict. What many scholars leave out, however, is that it was Sparta, and not Athens, that initiated the war by giving the latter an ultimatum to roll back from Potidaea, restore independence to Aegina, and repeal the Megarian decree, or face confrontation. Athens simply refused to submit (Thucydides, 2009). What Sparta did was to initiate a war against Athens before the latter would surpass the former in terms of material capabilities and geopolitical influence. If the Spartans had waited for Athens to overtake their city-state, it was assumed that a Spartan triumph would have been less probable as relative strength increases the likelihood of victory, that is, it would be more likely for Sparta to win a war against Athens while the former still had the upper hand (Jianren, 2019). In international relations parlance, this is today referred to as a preventive war (Levy, 1987; Organski, 1968). There are in fact many historical analogies where a dominant great power has been dissatisfied with the shifting balance of power in favour of a rising great power, and, consequently, has sought to initiate a preventive war to halt, or reverse, an ongoing power transition process in order to maintain its relative power and influence. As one scholar argues, ‘the single greatest constraint on the emergence of any new power is the possibility that its actions will trigger counterbalancing behavior or perhaps a preventive attack’ by an established great power (Montgomery, 2016, p. 6).5 This logic is based on an expected-utility framework in which a declining great power will desire to fight a war at a point in time when it is still stronger than a rising challenger, as the probability of victory would be higher at such a moment, compared to a situation in which war is delayed to a point in time where the rising power has overtaken the hegemon (Jianren, 2019). In addition to the case of Sparta, the idea of preventive war was also dominant in German military thinking and war preparations during the late nineteenth and early twentieth centuries against a rising Russia in the East (and towards France in the West). German officials argued that a preventive war should be launched before Russia could manage to overtake Germany in terms of relative power as this would make victory more likely and reduce the costs of war (Snyder, 1984). Similarly, policy makers in the USA did also push for a preventive war against the Soviet Union and China in the early years of the Cold War ‘on the theory that it would be easier to defeat them now than later when their industrial and military strength has increased further’ (Organski, 1968, p. 348).6 According to the famous historian A.J.P. Taylor, ‘every war between the Great Powers [in the 1848–1918 period] started as a preventive war, not a war of conquest’ (Levy, 1987, p. 84). While established great powers have tended to launch preventive wars, rising great powers, such as Athens, were left with the choice to submit to the will of the strong or respond in kind to avoid any losses to their newly acquired power and influence. ‘So make up your minds here and now,’ Pericles argued at an assembly in Athens to debate the Spartan ultimatum, ‘either to submit before any harm is done, or, if it is to be war (and in my view that is the best course), to make no concessions for reasons either great or small, and to refuse to live in constant fear for our own possessions’ (Thucydides, 2009, Ch. 141).

#### Great power conflict’s won’t escalate – realism doesn’t take into account MAD

**Can and Chan 3/3** (\*Ciwan M. Can and \*\*Anson Chan, \*PhD in international relations, \*\*Former Chief Secretary for Administration of Hong Kong. Journal of Asian Security and International Affairs, "Preventive or Revisionist Challenge During Power Transition? The Case of China–USA Strategic Competition", 3/3/2022, 2022;9(1):7-25. doi:10.1177/23477970221076646, accessed on 6/22/2022)//gideon

Although there are many historical cases that illustrate how established great powers have initiated preventive wars against rising great powers during power transition processes, there are no such cases to be found from the second half of the twentieth century onwards. The reason for this is mainly attributed to the existence of nuclear capabilities by the great powers and that this mutual deterrent capability has made hegemonic wars between them less likely. This is due to the fact that nuclear weapons significantly have reduced the probability of victory and increased the costs of an all-out military confrontation through ‘mutually assured destruction/MAD’ between the great powers (Betts, 1985; Keohane, 1984; Monteiro, 2014; Can & Chan, 2020).7 As such, it was the existence of MAD, the argument goes, that prevented the USA from launching a preventive war against the Soviet Union in the 1950s and early 1960s to halt the latter’s emergence into a peer competitor (Layne, 2020). According to strategic competition theory, it is, therefore, more probable, in the age of MAD, that great powers, during periods of power transition, will limit their competition and rivalry to the diplomatic domain where they will seek to increase their relative strategic advantage in the world while weakening their competitors’ without engaging in direct military confrontation with each other, that is, for diplomatic paradigm shifts to occur in the bilateral relationship as the rising great power approaches parity with the hegemonic power (Jianren 2019). A diplomatic paradigm shift can furthermore simply be understood as ‘changes in a state’s guiding principles, policy goals, and policy priority, of its foreign policy focus’ (Jianren, 2019, p. 20). For the purpose of our argument, we here focus on diplomatic paradigm shifts in the foreign policy posture of a declining versus a rising great power towards each other during a power transition process. In line with the preventive war model, we argue that a diplomatic paradigm shift should be expected to first occur in the existing hegemonic power towards the rising great power, the purpose of which is to halt, or reverse, the power transition process which is working in favour of the latter. The policy focus of the existing hegemonic power will very much be concentrated around the attempt to weaken the increasing strategic influence of the rising great power, be it political, economic or military. This paradigm shift in the existing hegemon’s foreign policy goals towards the rising power will consequently lead to a ‘response’ by the rising great power whereby it will seek to transform its own foreign policy posture to minimise and/or avoid damage or losses that it might incur on the continuation of its development and expansion of its strategic influence, in opposition to the hegemon’s attempt to reverse the transition process (Jianren, 2019). Rather than locating the question of systemic dissatisfaction and initiation of a great power strategic challenge in the agency of the rising power during a power transition, we instead argue that dissatisfaction and initiation of great power strategic competition should be identified in the agency of the existing hegemonic power (Yilmaz & Xiangyu, 2019). The next section of this article provides a case study to test the explanatory power of our argument.

### 2NC – China Not Revisionist

#### The US is instigating conflict – China is defensive and responsive – the aff makes things worse

**Can and Chan 3/3** (\*Ciwan M. Can and \*\*Anson Chan, \*PhD in international relations, \*\*Former Chief Secretary for Administration of Hong Kong. Journal of Asian Security and International Affairs, "Preventive or Revisionist Challenge During Power Transition? The Case of China–USA Strategic Competition", 3/3/2022, 2022;9(1):7-25. doi:10.1177/23477970221076646, accessed on 6/22/2022)//gideon

Empirical observations reinforce the argument outlined in previous section, as can be witnessed by the changing focus in US foreign policy towards China in the early 2010s, when the power transition process between China and the USA accelerated following the global financial crisis of 2008 and after China overtook Japan to become the 2nd largest economy in the world. The first indication of this paradigm shift in the USA was the so-called ‘Pivot to Asia’ strategy, famously announced by then Secretary of State Clinton (2011)8 and laid the groundwork for a shift in US foreign policy priority from fighting terrorism in the Middle East and Central Asia to great power competition in East Asia (Shambaugh, 2018). This strategy, later defined as the ‘Rebalance to Asia’, aimed to increase US military, economic and political influence in the region while weakening the influence, and contain the rise, of China (Jianren, 2019; Takahashi, 2021). The motivation for this rebalance was primarily taken to be China’s increasing weight in the Asia-Pacific region, its assertiveness relating to its territorial claims in the East and South China Seas from 2009 onwards, and its alleged reluctance to abide by the norms and values of the liberal international order (Friedberg, 2015; Shifrinson, 2018b; Strangio, 2020). More specifically, the USA sought to strengthen its own influence and weaken China’s by increasing its political, military and economic presence in the Asia-Pacific. In the military and political dimensions, the USA reinforced its forward deployment and commitments to existing allies, began ‘freedom of navigation operations’, and tried to forge new security partnerships with countries such as India and Vietnam, while a more active participation in regional multilateral organisations, such as the forging of partnership with the Association of Southeast Asian Nations (ASEAN) and the East Asian Summit (EAS), were strengthened to promote the image of USA as a ‘resident power’ (Takahashi, 2021; White House, 2011). The economic dimension of the strategy was aimed to underpin the desired political and military involvement of the USA in the region and was manifested through the proposal to form a Trans-Pacific Partnership (TPP) for trade and investment (Kirshner, 2021). With the TPP, the USA essentially sought to forge a trade alliance whose entry requirements were designed to exclude China. Increasingly, it became clear that Washington desired to push China out from the evolving regional politico-economic architecture and isolate it, unless Beijing accepted continued US regional dominance and abide by the norms and values of the liberal international order (Jianren, 2019; Can & Chan, 2020). China’s response to this paradigm shift in the USA came in 2013, after Xi Jinping’s proposal to Barack Obama that both countries should forge a ‘new type of great power relationship’ to mitigate a clash of interests, that is, the Thucydides’ Trap, was turned down by the USA (Nakazawa, 2021). The first indication of China’s diplomatic paradigm shift was the transformation of the policy of ‘keeping a low profile’ from the Deng Xiaoping era to ‘striving for achievement’ as announced by Xi Jinping in late 2013. With this paradigm shift, priority was given to create a more favourable environment for the continuation of China’s national rejuvenation by establishing friendly relations with countries from Asia to Africa and Europe, aimed to win over political support from them as a reaction to the USA balancing attempt: the so-called ‘go-west’ strategy (Nakazawa, 2021; Yan, 2014). According to some observers, ‘keeping a low profile’ of the Deng era had not prevented the USA from seeking to contain China, and Xi Jinping had, therefore, to adapt a new and more pro-active foreign policy paradigm to assure the international community of China’s benign intentions and willingness for cooperation and integration with the world to offset the US containment strategy (Yan, 2014). The new orientation in Chinese foreign policy was paralleled with acceleration of China’s military modernisation process that had begun in the 1990s and the advancement of the Anti-Access/Area Denial (A2AD) strategy which aimed to reduce the viability of any US and allied military intervention close to China’s shores and keep them at bay (Beckley, 2017; Campbell & Doshi, 2021). This was accompanied by the announcement of the Silk Road Economic Belt, the Twenty-First Century Maritime Silk Road and the formation of the Asian Infrastructure Investment Bank (AIIB). All these ambitious endeavours aimed to improve China’s defensive capabilities, and dialogue and cooperation between China and the international community, and thus to minimise any losses from the challenge posed by a dissatisfied US ‘Rebalance to Asia’ strategy (Jianren, 2019).

## Case – Cohesion

### 1NC – AT: Cohesion Impact

#### Alliance cohesion makes conflict more likely – changes the threat perception of the “defensive” alliance

Kenwick et al. 15 (Michael R. Kenwick | John A. Vasquez | Matthew A. Powers | ‘Do Alliances Really Deter?’ | <https://www.jstor.org/stable/10.1086/681958?origin=JSTOR-pdf> | DOA: 7/6/2022 | SAoki)

Another theme in the literature is that a defensive alliance can create a moral hazard in that the presence of a defensive alliance emboldens a weak ally to take “aggressive” action because it fears of reprisal are lessened or because it is emboldened to take action because it can rely on the support of a powerful ally (Snyder 1984).2 Alternatively, one could argue that even if the weaker state is not emboldened to take aggressive action it will simply be less restrained and compliant when bargaining with potential challengers. The security dilemma, the steps-to-war, and moral hazard offer an explanation as to why defensive alliances might increase the probability of conflict rather than deterrence. This expectation of deterrence failure is stated as: The Steps-to-War Hypothesis: Defensive alliance formation will more often be associated with deterrence failure than deterrence success in regard to the onset of interstate disputes and war. Each of these hypotheses makes contradictory claims. Supporters of a broad conception of deterrence would expect the deterrence hypothesis pass testing and the steps-to-war hypothesis to be falsified. The steps-to-war hypothesis embodies the logic of the security dilemma and more specifically, Senese and Vasquez’s (2008) claim that defensive alliances, like all alliances, increase threat perception and are more apt to be followed by war than cases where no alliances are present. It would therefore be expected not only that the deterrence hypothesis would be rejected but that the steps-to-war hypothesis will pass testing. In the event both hypotheses uniformly fail and a null finding is uncovered, this would suggest that alliances are ineffective deterrents, but do not share a positive association with interstate conflict, as the steps-to-war explanation would posit. Determining whether deterrence actually occurs is fraught with many problems of inference (see Levy 1989). While recent studies have made considerable headway in addressing some of these problems, we outline four issues common to this recent body of work that preclude the ability to adjudicate between the competing expectations outlined in the previous section. The first of these issues revolves around a tendency to conflate the effect of having an alliance with the effect of forming an alliance. Much of the recent work on alliances examines deterrence by assessing whether states with particular alliance types are more or less likely to have disputes initiated against them when compared to states without such alliances (e.g., Benson 2011; Johnson and Leeds 2011; Kang 2012; Leeds 2003). Though intuitively appealing, this approach is problematic when testing the stepsto-war hypothesis because it fails to take into account the specific mechanism linking alliance formation with increases in the probability of conflict. The logic of this hypothesis suggests that it is not necessarily the presence of a defensive alliance that will prove threatening, but rather the formation of these alliances that alter the status quo, may be perceived as a hostile action and, perpetuate a security dilemma between potential combatants. These explanations therefore focus on alliance formation and do not necessarily make predictions about the long-term effects of having alliances. The deterrence hypothesis, on the other hand, predicts that defensive alliances should always deter, regardless of the time since formation. The relevant period of observation for adjudicating between these competing expectations is therefore the time around formation, and not the time encompassed by the whole lifespan of an alliance. The second problem endemic to existing studies of extended deterrence is the commonplace assumption that the relationship between alliances and deterrence has remained unchanged over the past two centuries. Indeed, there are strong theoretical grounds to expect that the introduction of nuclear weapons at the conclusion of World War II fundamentally altered the logic of deterrence. Prior to the nuclear era, alliances represented a means by which a state could suddenly and dramatically increase its ability to wage and win a conventional war. Even so, the potential attacker in these cases—seeing that its intended target is actively seeking to increase its power—may successfully offset the alliance by seeking out its own alliance partners to assist it in attacking the target (Snyder 1984). In this conventional framework, deterrence occurs when a state increases its capabilities by such an extent as to make the prospects of victory too low for potential opponents. By comparison, the logic of nuclear deterrence is clearer on why war should be prevented. In contrast to the conventional framework, where deterrence is induced by shifts in conventional military capabilities, nuclear deterrence rests on the logic of mutually assured destruction and the notion that nuclear armaments make wars unwinnable, effectively removing the Clausewitzian rationale for pursuing war as a means of attaining political objectives. No goal is worth the complete destruction of a society, and if neither side can attain its goals, then the irrationality of such a war is even more evident (Kahn 1960). Total nuclear war therefore brings about a revolution in the way international politics is conducted and makes such wars unthinkable. In short, failing to control for nuclear weapons applies the more convincing logic of nuclear deterrence to a domain where it may be less applicable. A third problem centers on the common use of militarized disputes as the exclusive means of testing deterrence arguments (e.g., Benson 2011; Kang 2012; Leeds 2003). The issue here is that the logic of deterrence is most often linked with whether a potential challenger will attack a target holding an alliance (Smith 1995). Indeed, defensive alliances are most often operationally defined as those that promise a state will come to the aid of another “in the event of attack on the partner’s sovereignty or territorial integrity” (Leeds et al. 2002, 241). The reason these alliances should also deter low level military actions such as threats to use force, displays of force, or actions such as border fortifications is not clearly specified.

# Counterplans

## CP – Ban the Plan

### 1NC – Ban the Plan

#### The United States Federal Government should substantially increase its security cooperation with the North Atlantic Treaty Organization by banning cognitive biotechnology.

#### Cognitive biotech and AI are merged by 2035

**Nørgaard and Linden-Vørnle 21** (Katrine Nørgaard and Michael Linden-Vørnle, a Chief Adviser at the National Space Institute (DTU Space) which is part of the Technical University of Denmark. Scandinavian Journal of Military Studies, "Cyborgs, Neuroweapons, and Network Command", 2/18/2021, link.gale.com/apps/doc/A652946693/AONE?u=umuser&sid=bookmark-AONE&xid=45fb1427, accessed on 6/23/2022)//gideon

In this article, we will explore the emerging field of military neurotechnology and the way it challenges the boundaries of war. We will argue that these technologies can be used not only to enhance the cognitive performance of warfighters, but also as a means to exploit artificial intelligence in autonomous and robotic weapons systems. This, however, requires the practice of a collaborative network command and a governing framework of cyborg ethics to secure human control and responsibility in military operations. The discussion of these governing principles adheres to the tradition of military studies. Hence, we do not aim to present a neuroscientific research program. Nor do we wish to embark on technical solutions in disciplines such as artificial intelligence and robotics. Rather, the intention is to make the highly specialized language of these sciences accessible to an audience of military practitioners and policymakers, bringing technological advances and challenges into the discussion of future warfighting.

"It is currently estimated that AI and robotic systems will be ubiquitous across the operational framework of 2035." (RAS MDO white paper 2018: 25)

Are we on the verge of a robotic revolution of military affairs? Will intelligent machines take control of the future battlefield and replace human warfighters? Recent advances in military neurotechnologies, robotics, and artificial intelligence (AI) have evoked the transgressive image of the 'cyborg warrior', a weaponized brain-computer network powered by AI and neurocognitive augmentation. In the wake of these emergent military technologies, some of our most fundamental assumptions and definitions of human intelligence, autonomy, and responsibility have been challenged. These concepts are central to our understanding of lawful and ethical conduct of war. They are also closely associated with human agency and the ability to make context-dependent decisions and critical evaluations in matters of life and death. The question that begs to be answered is whether - and how - these concepts can be applied to cyborg systems that, per definition, are not entirely human? What kind of military capacity is a cyborg warrior? A warfighter or a weapons system? A human or a machine? In the following, we will argue that the cyborg warrior is neither a human subject nor a piece of military hardware, but a heterogeneous assemblage - or rather a 'nexus' - of human and non-human capacities, transmitting and decoding streams of information in military battle networks. As such, we prefer to talk about cyborg and neurocognitive weapons systems, stressing the intrinsic entanglement of human and artificial intelligence challenging traditional human-machine distinctions and dichotomies.

#### That’s an impact multiplier for AI – allows superintelligence to literally control our bodies

**Nørgaard and Linden-Vørnle 21** (Katrine Nørgaard and Michael Linden-Vørnle, a Chief Adviser at the National Space Institute (DTU Space) which is part of the Technical University of Denmark. Scandinavian Journal of Military Studies, "Cyborgs, Neuroweapons, and Network Command", 2/18/2021, link.gale.com/apps/doc/A652946693/AONE?u=umuser&sid=bookmark-AONE&xid=45fb1427, accessed on 6/23/2022)//gideon

The article falls in four parts: The first part presents some basic concepts and definitions of cyborg technologies and neuroweapons as part of an emerging neuroscientific security discourse. The second part of the article sets the general framework and context of multi-domain warfare in which these technologies are shaped and applied as military capabilities. The third part introduces the concepts of 'collaborative risk mediation' and 'composite intentionality' stressing the mutual entanglement and 'interference' of human and artificial intelligence in the emerging domain of neurospace. In the last part of the article, we address the urgent need of governing principles and guidelines, including the legal and ethical aspects of cyborg warfare. Thus, we call for interdisciplinary discussion of the emergent frontiers and practices of neurospace and the negotiation of neuroethical standards in the international security community. At the center of these discussions, we pose the question of 'meaningful human control' and responsibility in networked military command.

The Neuroscientific Security Discourse and the Realm of the Cyborg Warrior

As a first step in our inquiry, we need to distinguish between neurotechnology, which is used to detect, affect, and target human brain activity (e.g.: improve, repair, degrade or manipulate cognitive skills), on the one hand, and AI, which is used in computers, sensors, and robotic systems, on the other hand. A 'neural network' is a specific form of AI, consisting of a set of algorithms resembling the working human brain. A 'neuron' in a neural network is a mathematical function that collects and classifies information according to a specific architecture (Chen 2019). Neurocognitive or cyborg networks, on the other hand, are hybrid systems of human and artificial intelligence, i.e. brain-computer networks that integrate the cognitive advantages of humans and computers. For many years, the two sciences, the science of the human brain and the science of AI, have developed side by side, mutually inspiring and informing each other. Now, the scientific exploration of neurotechnology and AI is rapidly converging and accelerating the development of neural feedback systems that allow a two-way communication stream between the human brain and the computer. The convergence of AI and neurotechnology and the implications of integrating, not just combining or 'teaming' human and machine cognition,[4] is the focus of our interest. Humans and computers work together everywhere. This is not new. However, until recently they have done so as separate entities. This separation is beginning to erode, as ubiquitous AI and neurotechnological advances have made the distinction between human and machine cognition unclear and in some cases even obsolete. When we refer to 'cyborg and neurocognitive weapons systems', and not just one or the other, it is precisely because we want to stress this increasing interference of human and non-human cognition, which goes way beyond - and has to be distinguished from - other hybrid technologies such as bionic limbs and advanced hearing or visual aids.

For this same reason, it is important not to confuse the notion of the cyborg warrior with the concept of the 'centaur warfighter' (Scharre 2018: 321), which is often used as a metaphor for human-machine teaming. The two concepts are closely related, but not synonymous. This distinction can be expressed as the difference between integration and automation of machine intelligence, perception, and reasoning. Whereas centaur human-machine teaming consists of humans plus machines, with machines performing clearly demarcated automated functions, the cyborg warrior functions as a neurally enhanced and integrated system architecture,[5] merging human and machine cognition. Centaur human-machine teaming does not necessarily imply cognitive or sensory enhancement of the human operator. Human and machine cognition is not neurally integrated. Instead, humans and machines perform different role-specific tasks that are largely based on predetermined decision models where the machine's role is conditioned by one or more rule sets (Murray & Yanagi 2015: 17).

As opposed to centaur human-machine teaming, cyborgs have no preprogrammed role specifications but adapt continuously to shifting situations and demands in the operational environment. According to Kline and Clynes (1961), such systems can be regarded as 'cybernetic organisms' (i.e. cyborgs) in that they entail both natural and artificial systems that are functional, portable, and/or biologically integrated (Wurzman & Giordano 2015: 90). As such, cybernetic and cyborg systems can be seen as "sophisticated distributed human-machine networks, such as integrated software or robotic augmentations to human-controlled activity, that would fuse and coordinate the distinct cognitive advantages of humans and computers" (Wurzman & Giordano 2015: 90). Consequently, cyborg technologies used in a networked risk environment will "reflect a combination of autonomous initiative and original problem solving by both human and machine. This means shared agency and responsibility in military decisions" (Murray & Yanagi 2015: 17).

The attribution of shared agency and responsibility to humans and machines is central to the definition of cyborg and neurocognitive weapons systems and demarcates a shift from automated decision support to collaborative information and risk management, with human and machine intelligence mediating and co-shaping the perception, organization, and distribution of risk. The advantage of such systems is increased flexibility and accountability insuring human judgment and responsibility over engagements while simultaneously leveraging the precision and speed of AI. This becomes particularly urgent when cyborg technologies are used as offensive weapons systems (Murray & Yanagi 2015: 17).

#### Outweighs Extinction

**Garahm 17** (Ross Garahm, Department of Sociology, University of California. AI & Society, "Discourse analysis of academic debate of ethics for AGI - AI & SOCIETY", 8/15/2017, https://doi-org.proxy.lib.umich.edu/10.1007/s00146-021-01228-7, accessed on 6/26/2022)//gideon

Existential risk is the paradigm for AGI ethics. Existential risk is defined as “one that threatens to cause the extinction of Earth-originating intelligent life or the permanent and drastic failure of that life to realize its potential” (Bostrom 2014: 15). AGI poses existential risk due to a possible ‘intelligence explosion’ upon becoming capable of designing and editing itself and other machines. This runaway intelligence gap makes AGI powerful and inscrutable—it could discard human beings as it deems them burdensome, it may destroy humanity through indifference or by accident, or it may view human beings as detrimental to ethical cosmic outcomes. Existential risks can be thought of statistically as a black swan (see Taleb 2007) or tail risk. Put simply, a black swan is a probabilistically unlikely event that has ruinous consequences, and thus must be judged more upon the scale of its impacts than its likelihood, as over a long enough time-horizon said ruinous outcome is guaranteed. Accordingly, practitioners “should assume that AGI may present serious risks to humanity’s very existence, and carefully restrain our research directions accordingly” (Yampolskiy and Fox 2013: 14). It is important not to fall prey to motivated and anthropocentric reasoning when considering AGI existential risk, for as Eliezer Yudkowsky puts it: “AI does not hate you, nor does it love you, but you are made out of atoms which it can use for something else” (Yudkowsky 2008: 27).

Human society has lived with the reality of existential risk for upwards of 60 years (nuclear weapons, climate change), and apocalyptic themes are woven into many theological traditions, so the concept of species-wide annihilation is hardly foreign. There is no particular reason for the two discourses to conceive of existential risk differently—it is an oddly egalitarian topic, equally relevant to all and of the utmost regardless of your intellectual orientation. Yet, AGI also holds great promise for ethical and humanitarian well-being, perhaps even ‘solving’ other existential risks like climate change—leading experts believe a backbone of highly coordinated technological infrastructures is critical for this task (see Hawken 2017), a job AGI could fulfill. It is therefore “a sharper double-edge sword than any other. It constitutes at once the greatest conceivable source of existential risk and global catastrophic risk, and our most promising means of mitigating such risk” (Cortese 2014: 7). Both groups noted that AGI will be the “most important event in the history of humanity” (Totschnig 2017: 908). It poses an existential risk, yet we already live in a world full of plausible earth-ending threats. Unlike nuclear weapons or climate change, AGI contains constructive as well as destructive potential for the fate of humanity.

AGI both sharpens and multiplies our moral obligation towards future generations of humans. Recent scholarship suggests that humans should consider more deeply their impact on the unborn, owing to the increased productivity of all forms of capital over time (Cowen 2018), the greater qualitative and quantitative scope future generations have to morally affect the world (Greaves 2017), and the uninhabited swathes of space and time that technology might one day populate with human lives (Bostrom 2003a; Beckstead 2013). Despite extensive discussion, there was little to distinguish technicians from PADs on this topic. I find concern that AGI has no intrinsic terminus (i.e., it does not die), making it both “capable of playing a much ‘longer’ and more deceptive game than the typical human” (Danaher 2015: 8), while the “marginal cost of creating an additional artificial intelligence after you have built the first one is close to zero” (Bostrom 2003b: 762). The consensus that AGI is an existential risk also implies consensus on its significance for all future humans, since this incurs the termination of all potential lives and inherently weds AGI ethics to the unborn. As such, it is hard to conceive why PADs and technicians would view this issue differently. The open question is whether an AGI can replicate human consciousnesses, possibly creating a vast community of replicated minds and greatly expanding the amount of subjective human experience in the future relative to the amount of human organisms. This refracts the scale of moral significance, as “even if a small fraction of these lives were to exist in hellish circumstances, the amount of suffering would be vastly greater than that produced by all the atrocities, abuses, and natural causes in Earth’s history so far” (Sotala and Gloor 2017: 389). Accordingly, “the creation of such artificial intellects will have wide-ranging consequences for almost all social, political, economic, commercial, technological, scientific, and environmental issues that humanity will confront in this century” (Bostrom 2003b: 764).

#### Biotech regulations spill up

**Patterson and Josling 1** (\*Lee Ann Patterson and \*\*Tim Josling, \*Research Associate, Center for West European Studies, University of Pittsburgh, \*\*Professor and Senior Fellow, Institute for International Studies, Stanford University. Western Economic Association International 76th annual conference, "REGULATING BIOTECHNOLOGY: COMPARING EU AND US APPROACHES", Jul/8/2001, http://aei.pitt.edu/28/1/TransatlanticBiotech.pdf, accessed on 7/7/2022)//gideon

The introduction of transgenic crops into the food supply has highlighted both the successes and the failures of the international trade system. On one hand, the GATT and the WTO have ensured that domestic and international markets have become ever more entwined, thus allowing producers and consumers alike to benefit from competition and economies of scale. On the other hand, such institutions are not well designed to mediate political disputes between domestic players arising from the application of trade law. The introduction of new technologies for food products illustrates this dilemma. The present open trade environment allows domestic political and regulatory differences to spill over into the international arena, with serious and detrimental effects on trade relations. This was the case in the beef hormone dispute between the EU and the US. While this dispute remains unresolved, it pales in comparison to the looming dispute over the introduction of transgenic crops into the food system.

## CP – Civil Consult

### 1NC – Civil Consult CP

Consult Version (the ending tries to make it standard; you can remove that if you want):

#### The United States Federal Government should enter a prior, binding, and genuine consultation with a NATO panel of Civil Society Organizations Concerning Emerging Biotechnologies on whether the United States Federal Government should [plan]. The United States Federal Government should implement the panel’s suggestions and codify this consultation process as the standard for all emerging biotechnology.

Reg Neg Version:

#### The United States Federal Government ought to begin a process of negotiated rulemaking over cognitive biotechnology, including an announced intention to [plan text], and convene a NATO panel of Civil Society Organizations Concerning Emerging Biotechnologies for binding mediation over the substance.

#### The CP Solves Best – it stops bad biotech from developing in the first place instead of trying to regulate it after the fact

Stevens and Newman 19 (\*Tina Stevens and \*\*Stuart Newman, \* Ph.D., Lecturer Emerita at San Francisco State University, Department of History, co-founder of Alliance for Humane Biotechnology, author of Bioethics in America: Origins and Cultural Politics; \*\*Ph.D., Professor of Cell Biology and Anatomy at New York Medical College where he studies developmental and evolutionary biology, a founding member of the Council for Responsible Genetics, coauthor of Biological Physics of the Developing Embryo, editor of the journal Biological Theory. 2019, Routledge, "Biotech Juggernaut: Hope, Hype, and Hidden Agendas of Entrepreneurial BioScience", pg 156-157)//gideon

Most journalists and bioethicists have so far appeared largely unable to assume a critical stance toward biotech. Instead they take at face value simplistic business models that don’t stand up to relevant scientific scrutiny. Under what often seems to be a reflexive granting of the benefitof-the-doubt, news coverage and commentary typically has offered up a pre-bundled formula for assessing the technology de jour: quote a critic, often mouthing a trope about the untowardness of “playing God,” in an otherwise laudatory account; do not reflect on how the demise of genetic determinism means no one can be any good at playing God and how, already, some bear the insupportable risks of trying to do so. The package has proven to be a powerful normalizing force. Another force, neutralizing dissent, involves actually inviting critics to the table. Once seated, they can acclimate to the heat of biotech trends intensifying despite unaddressed controversies. The authors of Evolving Ourselves: Redesigning the Future of Humanity – One Gene at a Time are co-founders of Excel Venture Management, “which builds start-ups in synthetic biology, big data, and new genetic technologies.” After announcing the inevitability of redesigned humans, they invite the public to help get us there. “Humans are on the way to becoming something else. Something of their own design,” they declare. “We are trying out various temporary solutions and recommendations before making permanent alternations. But the direction is clear.” Their suggestion for how to have a “sensible conversation” about “rapid unnatural evolution” is to ask for, “an ongoing ethics and permitted uses conversation.” “[H]elp us develop a set of guiding principles,” they invite (Enriquez and Gullans, 2016, pp. 262–264). Then, they frame the intended dialogue by feeding readers suggestions about what to ask for on the road to their biotech destinations. There is no “whether” we will get there. Best Practices for arriving at the inevitable is all that can be hoped for. There is no stopping a juggernaut. Or is there? Is it possible to avoid succumbing to bio-mesmerism or co-optation? We hope so and that is why we have written this book. Stellar information gathering civil society groups largely succeed in resisting them (Appendix I). A few manage to engage activism through petition drives, litigation, legislation, public forums, etc. But, with resources scarce, more husband their time, talent, and treasure by mastering facts and making connections in the hopes of inducing awareness and igniting action in others. Consulting them may provide the muscle needed to help move controversial issues out from behind the shuttered doors of meetings sequestered in the halls of academe or corporate backrooms, and off the tables of bioethics commissions. The public is inoculated against insight into plans hatched or parsed in these venues. In the town square, armed with facts and with biotechnology in hand, citizens may perhaps secure the critical mass necessary to lead us to a humane and human future. Biotech is a juggernaut, only if allowed to be.

#### Solves Civil-Military Relations which avoids great power wars, nuclear proliferation, and miscalculation - Extinction

**Lee 20** (Carrie Lee, Ph.D. in political science, Chair of the Department of National Security and Strategy at the US Army War College. Foreign Affairs, "Sleepwalking Into World War III", 10/19/2020, https://www.foreignaffairs.com/articles/united-states/2020-10-19/sleepwalking-world-war-iii, accessed on 7/7/2022)//gideon

Civilian political authority over military leadership is a bedrock principle of the U.S. Constitution, so fundamental to the American system of government that it has rarely been questioned. But since President Donald Trump entered office in 2017, his administration has systematically eroded the norms that have supported this constitutional principle for generations. The Trump administration has consistently elevated military voices over those of experienced civil servants in the development of foreign policy, and funding cuts to nondefense federal agencies, along with the resignations of many career civil servants, have left government offices woefully understaffed. As a result, policy planning and the guidance of strategic defense initiatives—which have historically been the purview of senior civil servants—have increasingly been ceded to those in uniform. Civilian authority over the armed forces is weaker now than at any point in living memory, and the Trump administration is increasingly engaging with the world in ways that mirror military preferences. The resulting foreign policy is eerily reminiscent of the “cult of the offensive”: an overconfidence in offensive military advantage that can lead to rapid escalation; such overconfidence is widely believed to have contributed to the outbreak of World War I. Unless civilian control over the military can be reestablished, the United States risks sleepwalking its way into another world war. SERVING CIVILIAN GOALS By giving civilian leaders authority over the military, the framers of the U.S. Constitution were not merely assigning elected officials a few oversight duties. They were creating a system in which defense planning would be guided by civilian needs and the military would carry out its activities in the service of civilian goals. Since Trump’s civilian “America first” plan was announced early in the 2016 presidential campaign, many members of the U.S. foreign policy community have viewed the agenda as an inherent danger to national security. Even more worrisome for those concerned about the continuing stability of civil-military relations, many of the cabinet nominees whom the new administration found acceptable were military officers, such as General James Mattis, General John Kelly, and Lieutenant General H. R. McMaster. From the beginning of the Trump era, the national security establishment made a Faustian bargain: in an effort to constrain the new president, it looked the other way as extraordinary numbers of active duty and retired military officers were appointed to positions usually reserved for civilian experts. As the “adults in the room,” these career military officials hoped to protect American alliances and constrain Trump’s worst impulses. Although few of these officers questioned the principle of civilian control, their narrow interpretation of civilian oversight meant that broader norms of civilian guidance became a kind of collateral damage in the struggle to contain the chaos. This political bargain gave the more experienced military officers at the highest levels of the administration, some of whom had served together for decades, a natural advantage over their civilian counterparts. Their shared service gave them a common language and, most important, an outlook that allowed them to easily sideline civilian outsiders like Secretary of State Rex Tillerson, Secretary of Homeland Security Kirstjen Nielsen, and later, Secretary of Defense Mark Esper. When leaders are appointed at the top levels of government, they staff their organizations with people whom they trust to execute their plans. Most civilian leaders have diverse professional networks to draw upon, but career military officers tend to know few qualified people outside of veterans’ organizations. As a result, many of the lower-level staff posts within the Trump administration have also been filled with retired military officers. In the office of the secretary of defense, uniformed officers continue to execute civilian responsibilities. And although sluggish hiring and retention difficulties have played a role, Mattis’s admitted preference for military officers over career civil servants during his tenure exacerbated the imbalance. When the department did hire civilians, it often placed them in “acting” roles with little power and even less influence. The result is that uniformed officers of the military have developed and enacted policy for the secretary of defense—such that it does not necessarily reflect the priorities of civilians in the administration. Indeed, the bipartisan National Defense Strategy Commission noted in November 2018 that “there is an imbalance in civil-military relations on critical issues of strategy development and implementation. Civilian voices appear relatively muted on issues at the center of U.S. defense and national security policy.” DIFFERING VIEWS OF THE WORLD Military officers and civilians see foreign affairs differently. Military officers tend to assume worst-case intentions and capabilities in order to be best prepared for potential threats. When called upon to act, they often prefer solutions that enable them to take the offensive. When civilians lose their voice in the process, military preferences shape security strategy in ways that reflect these institutional biases toward action and confrontation. And as civilian control of the U.S. armed forces has declined, these preferences have increasingly dominated American foreign policy. Thus, the current imbalance in civil-military relations has led to a foreign policy that has heightened international tensions, closed off avenues for productive diplomacy, and increased the risk of inadvertent escalation or even accidental war. Mattis and McMaster principally authored the 2017 United States National Security Strategy and the 2018 National Defense Strategy. These documents defined security almost exclusively in terms of great-power competition and state actors, emphasizing the threat from China in particular. The strategies largely approach the world as a zero-sum competition in which maintaining an advantage matters far more than cooperating for mutual benefit. Current U.S. strategy therefore filters the meaning of the changing geopolitical environment almost exclusively through military perceptions of threat. In the event of a war with China or Russia, the military would face a daunting task in the South China Sea or in the Baltic states. Its instinct, then, is to develop the strategies and build the capabilities that are most likely to win such a confrontation at the lowest cost possible. But these strategies can have dangerous consequences. With their emphasis on “globally integrated operations,” senior military commanders are developing retaliatory military strategies that emphasize speed and could lead to quick escalation, effectively limiting the options of political bodies like the North Atlantic Council in the event of a conflict. And by officially labeling China a “revisionist” state, Mattis and McMaster assume its hostility, forcing decision-makers to start from the premise that diplomatic approaches are unproductive and preventive action is the only way to contain China’s ambitions. Military leaders need civilian input in order to mitigate these risks. Military operational preferences privilege offensive action—civilian officials are best positioned to articulate the pitfalls of such an approach, lest the concern about a great-power war become a self-fulfilling prophecy. The military naturally seeks to modernize and acquire new weapons systems. In response to this desire, the Trump administration withdrew from at least three major arms control agreements, and it looks unlikely to renew the New START agreement with Russia. But without arms control, the United States not only risks setting off arms races but also loses transparency into its adversaries’ systems, capabilities, and intent. Decision-makers must then adopt the military’s worst-case assumptions in the event of a crisis, and they are likely to miscalculate. The military’s priority of seeking ever more lethal and modern weapons increases the risks of nuclear use and proliferation. The 2018 Nuclear Posture Review advocated for the development and deployment of low-yield nuclear weapons in response to Russia’s alleged intention to use limited nuclear strikes in regional conflicts. But by acquiring nuclear weapons specifically designed to be used in a much wider set of circumstances than the current inventory, the military has effectively lowered the threshold for using nuclear weapons—a fact that did not escape congressional leaders during their hearings on the document. Furthermore, as the United States modernizes its arsenal, states with vulnerable stockpiles may feel the need to invest even more in their nuclear programs, increasing their inventories and investing in second-strike capabilities. The United States has proposed to develop new weapons systems capable of dismantling nascent nuclear programs. Some states may therefore conclude that nuclear latency—the ability to develop a nuclear weapons program from existing peaceful infrastructure—is no longer a sufficient deterrent and choose to proliferate instead. The United States is rushing even now to introduce hypersonic weapons into its arsenal. Such missiles serve essentially no defensive purpose—and their development is leading to a new nuclear arms race. REASSERTING CIVILIAN CONTROL The White House and Congress must reestablish strong civilian control over military priorities if the United States is to find diplomatic solutions that can help avoid another great-power war. The next administration, whether under Joe Biden or Donald Trump, should refrain from equating military experience with foreign policy expertise. Rather, at the top levels of government, the president should reset the balance of power toward civilians, appointing officials whose backgrounds yield a variety of perspectives on foreign policymaking. The next president’s priority upon taking office should be to fill positions within the civilian office of the secretary of defense that have been largely taken over by uniformed military officers. These new civilians should be hired in a manner that maximizes the office’s demographic, experiential, and intellectual diversity. Current hiring laws privilege hiring veterans, which limits the diversity of those in policymaking positions. Civilian hiring initiatives must therefore act as a counterweight to that tendency. Finally, the administration should comprehensively review engagements, programs, and posture to ensure that U.S. actions are in fact aligned with strategic intent. Such a review should encompass all military programs. Many may seem like good ideas in isolation, but in combination they may prove to be provocative or threatening. Civilian leaders should make political determinations about the risks and rewards of military spending on offensive weapons programs; in particular, they should review the constraints on the new Space Force that may be necessary in order to both encourage service pride and avoid an arms race and conflict. In 1962, the Soviet Union placed nuclear missiles just 90 miles from the United States’ shore. President John F. Kennedy and the rest of the civilian leadership did not allow the military to continue with its standard operating procedures and preferred courses of action. Instead, they carefully orchestrated a series of signals that narrowly avoided the outbreak of open hostilities between the world’s two nuclear superpowers. Current U.S. policy resembles the firm civilian control and oversight of the Kennedy administration far less than it does the posture of the great powers before the outbreak of World War I. Civilian leadership was either co-opted or pushed aside as French, German, and Russian militaries pursued strategies that prioritize offensive operations and doctrines—leading to the now famous cult of the offensive. Privileging the military’s perceptions of threat over those of diplomats makes war all but inevitable. Without strong civilian oversight, the United States risks this catastrophic fate.

## CP – DOS

### 1NC – DOS Solvency

#### DoS solves---only a diplomatic approach enables innovation aligned with global competition

Burnett 13 (5 June 2013 | R. E. Burnett | “The Human Information Appliance in Combat, Intelligence, and Diplomacy Space” | DOI: 10.1109/MTS.2013.2259651 | DOA: 7/5/2022 | SAoki)

---solves basically the same as the DoD

The value of this can first be seen in our application of his 1996 concept of four-dimensional combat in the battlespace to the problem of homeland security (the homeland space) and even the activity of four-dimensional diplomacy (as the counterpart of national power to combat) in the diplomacy space. We have often argued in our seminars that if the Department of State would decide to more squarely mimic the integration of technological imagination and corresponding application of science and engineering activities into the process of diplomacy as has been the empirical record of the Department of Defense – we could expect similar types of operational transformation with regard to diplomatic policy outcomes in terms both nation-state behaviors and U.S. diplomatic doctrines. First – this view of international relations in the Skolnikoff tradition – applied more narrowly to the scope of national and homeland security is the direct legacy of the product of formula for national power that was the product in the end of war dialogue between President Franklin Roosevelt and M.I.T. engineer Dr. Vannevar Bush. The latter’s famous letter written to the president in response to Roosevelt’s 1945 inquiry about the role of science and engineering in the future of the American State after the war, Science: The Endless Frontier informs what we now refer to as the model of American science and engineering – “Mission Science” with the Manhattan Project conspicuously ever-present as the iconic event and example of the process and outcome of our science and technology enterprise. This model has generally followed a pattern of producing excellence in science and engineering at the largest collection of universities in the world, combined with a market economy, supporting private sector, and fueled by the largest GDP in the world. It is not beyond the pale – to even critique some modern day political scientists who continue to describe the world of political and economic power in almost purely normative philosophical terms without making nary a reference to the fundamental physical forces (as explained by the disciplines of physics – chemistrybiology) and corresponding technologies (applied knowledge as in computer science – the various engineering disciplines – etc.). Invoking the dialogue between President Roosevelt and Dr. Bush one more time – it should be remembered that the president did not write to Dr. Bush asking him for an investigation into how wartime discoveries from researchers into the rhetoric and philosophy of Plato and Aristotle helped America defeat fascism or how it would help it to develop American power toward successfully competing vis-à-vis the Soviet Union. Not that these ideas are not important – we argue that their worth is self-evident. However we posit, as in the Skolnikoff tradition, that American power arising from the Roosevelt-Bush dialogue was fundamentally a science, technology, engineering, and math (STEM) activity and remains so today. Operationally, this system has produced tremendous political and economic power for the United States that directly correlates to the very real physical and kinetic power that the scientists and engineers have successfully derived (science/knowledge) and produced (engineering) as tasked by their political leaders and benefactors. Interestingly and conversely, this system has not always produced the most comprehensively knowledgeable nor capable leaders or thinkers with regard to individuals who are typically trained at the most advanced levels of knowledge and practice in matters of, for example, physics and engineering, and simultaneously political/economic science and law. This has and does indeed occur over time in smaller numbers and we cite Libicki’s work as an example of such innovative thinking and we go further to argue that to begin this process at the undergraduate level by integrating science and engineering students with social science students in common courses in both science and politics may allow us to innovate yet again in a more competitive world and with regard to more complex problems as we are about to investigate in this article. Consider, for example, a future where the foreign service officer is as well trained in the use of information technology tools – in the field – as is the typical combat soldier deployed in Afghanistan today. Beyond the obligatory smartphone – the army is rapidly developing complete systems of dedicated applications (apps) connected to networks of machines, weapons, humans, and data that are solutions to a variety of dynamic environmental problems. Juxtaposed against the operational methods of the State Department, the technological gap between the American soldier and the American foreign-service officer appears to remain rather stark (and this is something more than a cultural artifact).

## CP – Technological Competitive Council

### 1NC – TCC Solvency

#### The Technological Competitive Council is the only effective way to solve for a myriad of emerging tech threats from Russia and China.

**Tadjdeh 15** (Yasmin Tadjdeh, " Commission: AI Dominance Requires Bold Action", Spring 2015, <https://www.nationaldefensemagazine.org/articles/2021/3/16/commission-ai-dominance-requires-bold-action>, Spring 2015, Accessed 7-5-2022)//ILake-SG

The United States must pump billions of dollars into artificial intelligence research if the nation wants to be “AI-ready” by 2025 and successfully compete with great power competitors China and Russia, according to new findings from a congressionally chartered panel. The National Security Commission on Artificial Intelligence — which was established under the fiscal year 2019 National Defense Authorization Act to examine ways to advance the development of AI for national security and defense purposes — recently released its final report to Congress in March after two years of work. “To win in AI, we need more money, more talent [and] stronger leadership,” said Chairman Eric Schmidt, the former head of Google’s parent company Alphabet. The 700-plus page report includes recommendations to the Biden administration and Congress that will require sweeping changes to better posture the nation for competition with other AI-enabled nations, such as China and Russia. The technology will impact the United States profoundly in the coming years, but despite some “exciting experimentation” and a few small programs, “the U.S. government is a long way from being ‘AI-ready,’” according to the report. The Defense Department and intelligence community must be AI-ready by 2025 to avoid falling behind, the commissioners said. Reaching that goal will require the government to create a Technology Competitiveness Council akin to the National Security Council, said former Deputy Secretary of Defense Robert Work. “The U.S. has no mechanism to organize for a tech competition,” he said. The National Security Council was created at the beginning of the Cold War to manage a long-term competition with the Soviet Union, he noted. “We need the same type of approach [for the current era of great power competition] at the White House level by establishing the Technology Competitiveness Council, [which] we believe should be chaired by the vice president and includes all the cabinet secretaries to develop and oversee a strategic national approach to emerging technologies like AI,” he added during a public meeting where the commission voted on the report before transmitting it to the Biden administration and Capitol Hill. The government will also need to make major investments in research to spur domestic AI innovation, Schmidt said. “We do need more money, particularly in AI R&D, so that by 2026 we get to $32 billion per year,” he said. Schmidt has previously said that China is rapidly catching up to the United States in AI, noting that the nation is only a year or two ahead of Beijing. China has made “a massive investment in this area with many, many, many smart people working on it. We have every reason to think that the competition with China will increase,” Schmidt said during the meeting. The commission’s report is split into two parts: “Defending America in the AI Era” and “Winning the Technology Competition.” The first focuses on implications and applications for AI for defense and national security, Schmidt said. The second recommends actions that the government must take to promote AI innovation to improve national competitiveness and protect critical U.S. advantages in the bigger strategic competition with China. The report features four pillars of action including leadership, talent, hardware and innovation. “If I’ve learned anything in studying the way the government works, leadership — especially from the top — is critical to get the bureaucracy to move to the next challenge and the next opportunity,” Schmidt said. Meanwhile, there is a “huge talent deficit” in the federal workforce, he said. “We need to build new talent and expand existing programs in government,” Schmidt said. “We need the world’s best to come and stay to cultivate homegrown talent.” One key recommendation of the report is to scale up digital talent within the government. This includes establishing new talent pipelines, including a U.S. Digital Service Academy to train current and future employees. The commissioners also called for a civilian National Digital Reserve Corps to recruit skilled employees including industry experts, academics and college graduates. Additionally, there needs to be a Digital Corps, which would be modeled on the Army Medical Corps. When it comes to hardware, it is critical the nation stays ahead, Schmidt said. However, it is very close to losing its edge when it comes to microelectronics — which underpin some of the Defense Department’s key capabilities including artificial intelligence, advanced manufacturing and space systems — because of the United States’ reliance on Taiwan. “We need to revitalize domestic semiconductor manufacturing and ensure that we’re two generations ahead of China,” he said. Work noted that Taiwan is potentially vulnerable. If “China absorbed Taiwan — which is the source of many of the world’s hardware — that would really be a competitive problem for us,” he said. Fostering domestic innovation will come with a high price, Schmidt said. “AI research is going to be incredibly expensive,” he said. “We need the government to help set up the conditions for accessible domestic AI innovation.” The commission worked on its report with a great sense of urgency, Work said. Each of the 15 commissioners believe that AI-enabled systems will pose a threat to free and open societies in the future. “AI tools will be weapons of first resort, particularly between great powers,” he said. The U.S. armed services’ competitive military technical advantage could be lost within the next decade if the nation does not accelerate the adoption of artificial intelligence and other advanced technologies across its missions, Work said. “Our major military rivals are really all-in on military AI applications,” he said. “Defending against AI-capable adversaries without employing AI is an invitation to disaster. AI-enabled applications will operate at machine speeds and humans simply will not be able to keep up with them without help from their own algorithms and their own AI.” Speaking during a plenary meeting discussing a draft version of the report in January, commissioner Chris Darby, president and CEO of In-Q-Tel, an independent, non-profit strategic investor for the CIA and the broader U.S. intelligence community, said the United States faces five AI-related threats which illustrate a new society level of conflict that the United States must organize and defend against. The first is AI-enabled information operations. “AI applications and associated technologies will increase the magnitude, the precision [and] persistence of maligned information ops,” he said. The government should create a joint interagency task force within the Office of the Director of National Intelligence to lead and integrate public-private efforts to counter foreign-sourced maligned information. The second is targeted data harvesting, Darby said. Information security and integrity must be viewed through a national security lens. The government must protect its own data from adversarial interference or theft by defending against attacks. The third threat is AI-enhanced cyber capabilities. “Though the threats are still developing, in the future, AI-automated and enabled malware could make compromises such as the SolarWinds cyber attack orders of magnitude more effective, delivering greater precision, tailoring speeds, stealth and persistence at scale,” he said, referring to a massive hack that rocked the government and was discovered in December. Government agencies have pointed the blame at Russia, and it is believed that the breach went undetected for many months. To close gaps in the nation’s cyber defenses, the United States should continue to adopt recommendations suggested by the U.S. Cyberspace Solarium Commission, which last year released a major report to Congress, Darby said. The document — which featured 80 recommendations to lawmakers — broke its recommendations into six pillars, including: reform the U.S. government’s structure and organization for cyberspace; strengthen norms and non-military tools; promote national resilience; reshape the cyber ecosystem; operationalize cybersecurity collaboration with the private sector; and preserve and employ the military instrument of national power. Additionally, to head off future threats and accelerate countermeasures to current threats, the government should develop and deploy AI-enabled information sharing, anomaly detection and malware mitigation across its networks, Darby said. A fourth threat the United States must be aware of is adversarial AI against U.S. platforms, Darby said. These types of acts are here today and already impacting commercial machine learning systems, he added. “Among other moves to improve AI assurance, the government should create government-wide red teams to attack and harden our own AI applications,” Darby said. The fifth threat is more troublesome against the backdrop of the COVID-19 pandemic: AI-enabled biotechnology. New technologies such as clustered regularly interspaced short palindromic repeats — more commonly known as CRISPR — enable gene editing and make biology programmable, he said. “Biotech, sadly, can also have a dark side,” Darby side. “AI may enable the engineering of genetically targeted pathogens or the mental and physical bio-enhancement of … adversary combatants.” To address this, the government should increase the profile of biosecurity issues within U.S. national security agencies, as well as update the National Biodefense Strategy to include a wider vision of biothreats, Darby said. Commissioner Katharina McFarland, chair of the National Academies of Science Board of Army Research and Development, said the application of biotechnology can protect the United States against some threats as well as create new ones. “As we see the democratization of biotechnology and the expansion of … dual-use applications, we need to be of course sensitive to ... nations that don’t share our values, but work with the nations that do share our values to strengthen our ability to use these technologies appropriately and defend against when they’re not used appropriately,” she said. Commissioner Safra Catz, CEO of Oracle Corp., said the report is meant to be a wake-up call for the government. “There are some very, very bold actions we’re asking for,” she said. “This is pretty much the critical moment for our country and the investment that’s necessary.” Jim Shaw, executive vice president of engineering at the Crystal Group, a Hiawatha, Iowa-based manufacturer of high-performance computers, artificial intelligence systems and rugged computing platforms, said the commission’s report is a good start, but more work needs to be done. “We’re late to the game,” he said. “That’s one of the things that we probably need to just recognize right away. This is becoming an urgent need for us to spend resources to gain skill sets and talent … through universities and industry to try to, frankly, catch up with China and Russia.” The Pentagon and Congress should get on board with the commission’s recommendations, and take them even further, he said. “My hope is that it will snowball into quite a bit of activity,” Shaw said. “That’s essential for us to preserve” the nation’s edge.

## CP – Unilat

### 1NC – Unilateral CP

#### The United States federal government should increase research and development, proactive standardization, and open sourcing of domestic nanotechnology and biotechnology innovations.

#### The CP solves the aff without NATO – unilateral actions by the US foster international scientific follow-on

Kosal ’10 [Margaret E.; Associate Professor in the Sam Nunn School of International Affairs at Georgia Institute of Technology; "The Security Implications of Nanotechnology"; Bulletin of Atomic Scientists; https://www.tandfonline.com/doi/full/10.2968/066004006?needAccess=true; Accessed 6-22-2022; RL]

A more secure nano-future. Reducing the risk from state-based misuse of nanotechnology for biological or chemical weapons will mean consideration of the highly transnational nature of nanotechnology research and development. Traditional and innovative new approaches to nonproliferation and counterproliferation are important policy elements to reduce the risk of misuse of nanotechnology. Although the United States and the international community are currently attempting to limit the threat of biotechnology, serious discussion and anticipation of the potential future threats of nanotechnology should be initiated now. Greater engagement by the research community is perennially called for by pundits, policy makers, scientists, and the security community. For example, the report by the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction recommends that the U.S. intelligence community “work with the Biological Sciences Community” because the “Intelligence Community simply does not have the in-depth technical knowledge about biological weapons that it has about nuclear weapons.”13 It is unlikely that the intelligence community’s expertise on nanotechnology exceeds that of biotechnology. There is also an urgent need for people outside of the experimental research community (including federal and industry program managers) to engage with individuals in the technical security studies community. The United States should consider fostering proactive international scientific cooperation as a means to encourage beneficial use of nanotechnology. One mechanism to accomplish this might involve revisiting and reimaging Cooperative Threat Reduction for the 21st century, in which a nano-focused program engages not only Russia as partner, but also China, Iran, India, and Pakistan. Revitalizing support for Track 2 diplomacy—between scientists—is anDownloaded by [University of Nebraska, Lincoln] at 16:24 05 June 2016 Bulletin of the Atomic Scientists | WWW.THEBULLETIN.ORG july/august 2010 67 other possible avenue. Involvement of private industry at the international level will be crucial. One model could be the regional and global work of the International Council for the Life Sciences, including its efforts with the Organization of the Islamic Conference’s Standing Committee on Scientific and Technological Corporation to promote biosecurity in the Muslim research world and in the Middle East.14 Conclusion. Action is needed to anticipate the threat of nanotechnology for offensive chemical and biological weapons applications. The threat from nanotechnology varies. The required technical knowledge and materials may exceed the capabilities of non-state actors. On the other hand, state-based programs may not face these limitations. The time to develop and establish policy to neutralize potential misuses, whether by states or non-state actors, is now, rather than when such research applications appear inevitable. A better alignment of research priorities and planning guidance for nanotechnology will be needed to innovate and protect against newly emerging and growing threats. Reducing risks from the misuse of nanotechnology as applied to chemical and biological weapons means recognizing the globalized nature of nanotech research and development. Addressing the threats and opportunities presented by nanotechnology and other emerging technologies will require a strategic vision to foster revolutionary science. To be effective, such a vision will encompass truly multidisciplinary approaches and incorporate comprehensive capability and threat analyses. Improved monitoring, cooperation, and understanding of technical capabilities across the globe will all aid in this effort. Attempts to limit the peaceful, investigatory exploration of science are likely to be detrimental to the interests of international security and economic development. The ubiquitous nature of nanotechnology—along with biotechnology and information and communications technologies—means its applications are likely to be far reaching. Understanding potential proliferation challenges and threats that may be wielded through application of these technologies is critical. The development of countermeasures to those threats is a national and international security concern, and strong defensive capabilities are also important as a protective measure and as a deterrent. For now, the penultimate limitation is the infancy of the technology, but that restriction will not hold indefinitely. The laws of physics remain the final regulating influence on nanotechnology.

### 2NC – Unilateral CP

#### Consolidation of cognitive science efforts into US leadership fosters the climate of R&D confidence and tech superiority necessary to solve national security threats

Whitman 11 (Jim Whitman | “The Arms Control Challenges of Nanotechnology” | <https://doi.org/10.1080/13523260.2011.556848> | DOA: 6/26/2022 | SAoki)

There is a further impetus to national efforts to improve and consolidate relative standing in this field: Nanotechnology is the principal enabler of the Convergence of Technologies (CT). Its advocates foresee a ‘single engineering paradigm’ which will combine nanotechnology, biotechnology, information technology, robotics, and cognitive science.19 CT planning and prognostication has a strongly Realist cast, expressed most succinctly by former US Speaker of the House of Representatives, Newt Gingrich in the agenda-setting US National Science Foundation/Department of Commerce Report: ‘If we want this economy to grow, we have to be the leading scientific country in the world. If we want to be physically safe for the next 30 years, we have to be the leading scientific country in the world. If we want to be healthy as we age, we have to be the leading scientific country in the world. It would be literally madness to offer anything except an increase in scientific funding.’20 The same report also contains the following argument: Government has an important role in setting long-term research priorities, respecting the ethical and social aspects of potential uses of technology, and ensuring economic conditions that facilitate the rapid invention and deployment of beneficial technologies. Technological superiority is the fundamental basis of the economic prosperity and national security of the United States, and continued progress in [nano-, biological, information and cognitive] technologies is an essential component for government agencies to accomplish their missions. Science and engineering must offer society new visions of what it is possible to achieve through interdisciplinary research projects designed to promote technological convergence.21 But ‘what it is possible to achieve’ is not necessarily identical with ‘beneficial technologies’, particularly when the possibilities are so numerous, and so far-reaching in their implications. In a sober reflection on what ‘transformative technologies’ might entail, the principal EU report on CT noted that ‘Each [of the likely characteristics of CT applications] presents an opportunity to solve societal problems, to benefit individuals, and to generate wealth. Each of these also poses threats to culture and tradition, to human integrity and autonomy, perhaps to political and economic stability.’22 Yet as the conviction hardens that nations must secure a firm place in the development of nanotechnology and CT, considerable efforts are being made to further embed nanotechnology by creating strong linkages between public and private actors as well as between once distinct scientific disciplines and research centres, in order to establish and maintain momentum.23 In the US, effort devoted to entrenching nanotechnology was conceived as essential from the start and was crucially formative of the National Nanotechnology Initiative (NNI): The orchestration of all the government agencies behind the NNI concept was critical in getting the ‘jump start’ that was achieved. NNI was conceived as an inclusive process where various stakeholders would be involved. In 1999 we envisioned ‘a grand coalition’ of academic, industry, government, states, local organizations, and the public that would advance nanotechnology. Twenty-five agencies covered most relevant areas in national interest in NNI in 2006, and industry already is investing more for R&D in the US. [...] We identified nanotechnology as a ‘dormant’ [science and engineering] opportunity, but with an ‘immense’ potential. Creating a chorus to support nanotechnology, from 1990 to March 1999, was an important preliminary step.24 One of the effects of linking together government departments, private institutions, corporations, and universities in this way is that the extent to which the furtherance of nanotechnology and technological convergence are seen as key national endeavours is both widened and reinforced through a dense network of interlocking interests. In light of this and the capabilities and disposition of other states, concerns about the environmental, social, and ethical implications of nanotechnology and CT25 are acknowledged at a strategic level, but in ways unlikely to disrupt planned momentum. So it is that the primary EU report on CT states: Tremendous transformative potential comes with tremendous anxieties. These anxieties need to be taken into account. When they are, converging technologies can develop in a supportive climate. To the extent that public concerns are included in the process, researchers and investors can proceed without fear of finding their work over-regulated or rejected.26

# Disadvantages

## DA – DOD Tradeoff

### 1NC – Link

#### Human augmentation based biotechnology is VERY expensive for the military

Mick Ryan & Therese Keane 2-5-19 [Mick Ryan](https://twitter.com/WarintheFuture) is an Australian Army officer, and Commander of the Australian Defence College in Canberra, Australia. A distinguished graduate of Johns Hopkins University and the USMC Staff College and School of Advanced Warfare, he is a passionate advocate of professional education and lifelong learning. [Therese Keane](https://twitter.com/therese_keane) is a scientist with the Defence Science and Technology Group. Although with a background in mathematics now expanding into biotechnology. The views expressed are the authors’ and do not reflect the official position of the Australian Department of Defence or the Australian Government. [Biotechnology and Human Augmentation: Issues for National Security Practitioners, [https://thestrategybridge.org/the-bridge/2019/2/5/biotechnology-and-human-augmentation-issues-for-national-security-practitioners]//WILLIAM](https://thestrategybridge.org/the-bridge/2019/2/5/biotechnology-and-human-augmentation-issues-for-national-security-practitioners%5d//WILLIAM) AGUSTIN RAHHHHHH

Over the last decade, military theorists and authors in the fields of future warfare and strategy have examined in detail the potential impacts of an ongoing revolution in information technology. There has been a particular focus on the impacts of automation and artificial intelligence on military and national security affairs. This attention on silicon-based disruption has nonetheless meant that sufficient attention may not have been paid to other equally profound technological developments. One of those developments is the field of biotechnology. There have been some breathtaking achievements in the biological realm over the last decade. Human genome sequencing has progressed from a multi-year and multi-billion dollar undertaking to a much cheaper and quicker process, [far outstripping Moore's Law](https://www.genome.gov/27541954/dna-sequencing-costs-data/). Just as those concerned with national security affairs must monitor disruptive silicon-based technologies, leaders must also be literate in the key biological issues likely to impact the future security of nations. One of the most significant matters in biotechnology is that of human augmentation and whether nations should augment military personnel to stay at the leading edge of capability. A first order issue will be group cohesion. Military institutions have deep experience integrating newcomers into their ranks. Fundamental to effective future teaming will be evolving this approach to establish trust and group cohesion between normal humans and those who are augmented. The degree to which military leaders can and should trust augmented personnel to make decisions about saving and taking lives is likely to be an evolutionary process. It also remains to be seen whether or not teams comprised of augmented and non-augmented humans are capable of developing [trust](https://csbaonline.org/research/publications/human-machine-teaming-for-future-ground-forces/publication). Experimentation and trials are needed to establish whether augmented people will bias away from decisions and input from non-augmented people and vice versa. While institutions can learn from historical integration challenges, there is one essential difference with augmented humans. Previously, integration of new groups into the military dealt with human beings. If augmentation using neurotechnology significantly enhances cognitive function, this may represent a separate and distinct group of future Homo sapiens. The second challenge will be accessibility. Military institutions will need to decide what proportion of its forces will be augmented. Given that early generations of this biotechnology may be expensive, it is unlikely an entire military institution can be augmented. If so, who will be augmented and why? Military institutions will need to develop a value proposition to ensure physical and cognitive augmentation produces superior outcomes to the use of un-augmented personnel. Yet another question to ask is whether military personnel will be de-augmented on leaving the service. The transition of augmented personnel into a largely unaugmented populace may be traumatic for military personnel, and for society more broadly. Even more severe in its repercussions may be transitioning de-augmented personnel into a populace where augmentation is ubiquitous. The third challenge will be conceptual. One Chinese scientist, [writing in 2006](https://academic.oup.com/milmed/article/171/11/1150/4577887), has proposed military biotechnology offers the chance to shift to a “new balance between defence and attack, giving rise to a new concept of warfare, a new balance of military force, and new attacking power.” While the emphasis of this particular article was on a more merciful form of warfare—about which we should be skeptical—it nonetheless highlights the requirement to rethink what biotechnology and human augmentation means for how military institutions develop warfighting concepts. When humans arrive with cognitive enhancement, a range of tactical, operational, and strategic concepts may become irrelevant. Strategic thinking, using a combination of biological and silicon-based technologies could take organisations in very different directions than is presently the case. It also bears examining whether those with augmentation will enable greater diversity of performance (particularly in the intellectual realm) or if it will lead to increased homogenisation of physical and cognitive performance. The fourth challenge is obsolescence. A fundamental challenge for humans waging war is that, despite technological advances, one of the weakest links is the physical capacity of the human. As Patrick Lin was written, [technology makes up for our absurd frailty](https://www.theatlantic.com/technology/archive/2012/02/more-than-human-the-ethics-of-biologically-enhancing-soldiers/253217/). Therefore, might normal humans without augmentation become irrelevant in a new construct where military institutions possess large numbers of physically and cognitively augmented personnel? It remains to be seen whether unaugmented humans might able to compete with physically and cognitively augmented military personnel. The augmentation of humans for different physical and cognitive functions may also drive change in how military institutions operate, plan, and think strategically. A fifth challenge is military education and training. Traditional military training emphases the teaching of humans to achieve learning outcomes and missions as individuals and teams. In an integrated augmented/non-augmented institution, training methods must evolve to account for the different and improved capabilities of augmented personnel and to blend the capabilities of augmented and non-augmented personnel. Similarly, education for military leaders currently seeks to achieve their intellectual development in the art and science of war. If humans augmented with cognitive enhancements are present, both institutional and individual professional military education will also need to evolve. Learning delivery, as well as key learning outcomes, will have to be re-examined to account for the enhanced physical and cognitive performance of this new segment of the military workforce. Even issues as basic as fitness assessments must be re-examined. Potentially, military organisations could drop physical assessments by automatically augmenting people to the institutionally desired level of performance. The sixth challenge is one of choice. Command structures demand a reduction in an individual’s free will to refuse such that informed consent is not quite the same as for the general population. And when experimental augmentation options progress to become approved interventions, can we equate a parent considering whether to choose an approved cognitive augmentation option for their child to a soldier contemplating the same when operating alongside augmented peers where the stakes are orders of magnitude greater? [How much choice](https://journals.plos.org/plosbiology/article?id=10.1371/journal.pbio.1001289) will military personnel have in the augmentation process? Will this be on a volunteer basis or by direction, and what are the moral, legal, and ethical implications of these stances? Speculation that augmentation may become mandatory for some professions [may also apply to the military](https://www.frontiersin.org/articles/10.3389/fnsys.2014.00107/full). The final issue addressed in this article is one of ethics. Research communities are grappling with the [ethical and moral implications](https://www.myvmc.com/news/ethical-issues-surrounding-implantable-brain-technologies/) of augmentation for society as a whole. While the first concern in evaluating the military applications of biotechnology is international humanitarian law, [bioethics must also be considered](http://ethics.calpoly.edu/greenwall_report.pdf). Ethical considerations pervade almost every aspect of human augmentation, and there are ethical considerations threaded through the other challenges raised in this article. For example, beyond the first order questions of whether we should augment soldiers are issues such as how much augmentation should be allowable. Military institutions should also assess the cumulative effects of multiple augmentations and the consequences of converging augmentation. There may also be a point at which a highly augmented human may cross the human-machine barrier, as well as a range of unanticipated capabilities that emerge from different augmentation combinations. A WAY AHEAD These issues must be informed by those within the biotechnology community, but they alone cannot solve them. Broader involvement by senior military, government, and community leaders is required. One expert in biotechnology [has written](https://bmcinthealthhumrights.biomedcentral.com/track/pdf/10.1186/1472-698X-2-3) that “clearly the new forms of power being unleashed by bio-technology will have to be harnessed and used with greater wisdom than power has been used in the past.” If military institutions are to demonstrate wisdom in their investments in biotechnology, they must explore societal impacts as well as effects within military institutions. “SPLITTING HUMANKIND INTO BIOLOGICAL CASTES WILL DESTROY THE FOUNDATIONS OF LIBERAL IDEOLOGY. LIBERALISM STILL PRESUPPOSES THAT ALL HUMAN BEINGS HAVE EQUAL VALUE AND AUTHORITY.” It is likely some augmentation will be—at least initially—expensive. It may be beyond the means of most people in society and, potentially, many government and corporate institutions. If only military personnel might be augmented, what are the impacts on civil-military relationships, and who would make this decision? In this construct, it could be unethical to deny the benefits of augmentation to wider society. However as [Yuval Harari has noted](https://www.amazon.com/Homo-Deus-Brief-History-Tomorrow/dp/0062464345/ref=sr_1_2?ie=UTF8&qid=1543706204&sr=8-2&keywords=homo+deus), this may see a differentiation in [how society views](https://archive.industry.gov.au/industry/IndustrySectors/nanotechnology/Publications/Documents/Emergingtechstudybio.pdf) augmented and non-augmented people—“Splitting humankind into biological castes will destroy the foundations of liberal ideology. Liberalism still presupposes that all human beings have equal value and authority.” In Western democracies, this poses profound questions about [conferred advantage](https://www.frontiersin.org/articles/10.3389/fnsys.2014.00228/full), societal sense of fairness and equality, and the value of individuals within society. In Western democratic systems, development of regulation, policy, and legal frameworks is [not keeping pace](https://www.nap.edu/catalog/13316/positioning-synthetic-biology-to-meet-the-challenges-of-the-21st-century) with the current tempo of complicated technological advancements. It cannot be assumed other states are allowing these deficits to slow their efforts in [biotechnology](https://www.nature.com/articles/d41586-018-06847-7), not to mention the unregulated efforts of non-state actors. While the focus of the fourth industrial revolution remains predominantly on technologies, perhaps for Australia (and other democracies) it is also these areas which require a [complementary](https://www.researchgate.net/profile/Lyria_Moses/publication/228183289_Agents_of_Change_How_the_Law_Copes_with_Technological_Change/links/5689b05d08ae051f9af7817f/Agents-of-Change-How-the-Law-Copes-with-Technological-Change.pdf) [revolution](https://digitalcommons.wcl.american.edu/aublr/vol6/iss3/1/) in the Whole of Nation enterprise so as to keep up with the pace of change and facilitate systematic assessment of human augmentation implications.

### 2NC – Link

#### Neuroscience requires a lot of funding, resources, and attention for limited results

Henry Markram 10-17-13 [Seven challenges for neuroscience. Funct Neurol. 2013 Jul-Sep;28(3):145-51. doi: 10.11138/FNeur/2013.28.3.144. PMID: 24139651; PMCID: PMC3812747.]//WA

How does the brain compute? What are the computational principles that allow it to model, predict, perceive and interact with the outside world? How does the brain implement these principles? To answer these fundamental questions, we need data ladders – but data and correlations among data sets are not enough. What we need to identify are causal mechanisms: for example we need to understand the way neurotransmitters and hormones modulate neural activity, synaptic transmission and plasticity, or, at a higher level, the way the brain “binds” information from multiple visual areas to form a unified picture of the world. The classical way to establish causation is through experimental manipulation of living brains or tissue samples combined with simultaneous measurements of the response. But experiments in humans and animals are technically difficult, expensive and often cannot answer the questions we need to ask. For ethical and technical reasons, most invasive techniques are impossible to use on humans. Non-invasive imaging methods lack the spatial and temporal resolution to probe detailed neuronal circuitry. Working in animals, there are technical limitations on how many experiments we can perform and how much information we can extract from each experiment. In other words, neuroscience is in a position similar to that of cosmology or climatology – sciences in which opportunities for experiments are strictly limited. In each of these disciplines, researchers investigate causal mechanisms, not by manipulating a physical system (it is hard to manipulate the cosmos!) but by building computer models of the system and manipulating the models in in silico experiments. Obviously, every model needs to be validated. But once it has been demonstrated that it effectively replicates a particular class of experimental observation, it becomes a new class of experimental tool.

## DA – Turkey-Russia Relations

### 1NC – Turkey-Russia Relations Shell

#### Turkey-Russia relations are high now

Gaber 22 (Yevgeniya Gaber is a nonresident senior fellow at the Atlantic Council IN TURKEY, a Ukrainian foreign-policy expert, and a nonresident senior fellow at the Center in Modern Turkish Studies at the Norman Paterson School of International Affairs at Carleton University where she is currently teaching a course on Black Sea regional security, June 22, 2022, Turkey’s wartime bridge to the West is collapsing, https://www.atlanticcouncil.org/blogs/turkeysource/turkeys-wartime-bridge-to-the-west-is-collapsing//RM)

For the first time in a while, Turkey was not only acting in line with transatlantic allies but also taking a lead in the region in a way that has bolstered its importance as a key NATO member. US officials have gone as far as to suggest that Turkey transfer its S-400 missile-defense systems to Ukraine in a bid to finally solve the problem of Russian air defense systems stationed in a NATO member state and the consequent Western sanctions imposed on Ankara. Turkey has bluntly rejected that proposal. Instead, it has slowly allowed domestic problems, regional geopolitics, and pragmatism to dictate its approach to the war. As a result, Turkish leadership once again appears eager to continue business as usual with an increasingly isolated Russia. Shifting winds Though only obliged to close the Bosporus and Dardanelles straits for the naval ships of states at war under Article 19 of the Montreux Convention, Ankara has denied access to non-littoral NATO states as well. Turkey’s fears of losing out to the West in its ambitions for a kind of regional ownership of the Black Sea prevailed over the security threats posed by Russia. Turkey’s desire to limit the presence of NATO vessels in the Black Sea, which might lead to further escalation with Russia, is understandable—even if not in line with the Alliance’s objectives. It is harder to justify the statements of Turkish Defense Minister Hulusi Akar wondering whether mines discovered in the Black Sea had been laid there deliberately to create an excuse for NATO minesweepers to enter those waters. Turkey is also blocking the quick addition of Sweden and Finland to NATO, trying to use the situation to solve its own problems and voice its own security concerns. It is highly unlikely that Turkish leadership will block the membership of the two Nordic countries in the long term. Nevertheless, its current diplomatic bargaining has revealed major differences in threat perceptions as seen from Ankara and other capitals. While for most of the European states, the major threat on NATO’s eastern borders is a revisionist Russia, for Turkey it is Kurdish People’s Protection Units (YPG) and Kurdish Workers Party (PKK) fighters operating in Syria and allegedly finding a safe haven in Finland and Sweden. Obviously, skyrocketing anti-American sentiments in Turkey and a traditional mistrust for the West limit the possibilities for cooperation on Ukraine. Whereas the majority of Turks support Ukraine in this war, polls show that more than 48 percent blame the United States or NATO for the conflict while only 34 percent hold Russia responsible. There is a widespread belief in Turkish society that the war in Ukraine is just another regional conflict instigated by Western powers after Afghanistan, Iraq, Syria, Libya, and others. Russia’s invasions and aggression in in South Ossetia, Abkhazia, Nagorno Karabakh, Transnistria, and more recently in Ukraine and Syria don’t evoke a similar response among Turks. Populist rhetoric, burgeoning ahead of next year’s elections, as well as massive anti-Western propaganda on Turkish media mostly featuring retired generals, nationalist pundits, and (pro-)Russian experts with a strong Eurasianist agenda, do not help either. President Recep Tayyip Erdogan’s economic and strategic agendas also depend on close coordination with Moscow. Russia supplies almost half of Turkish domestic gas demand, provides technology for the country’s first nuclear power plant in Akkuyu, and serves as the source of more than five million tourists annually. The Kremlin’s support is also vital for Turkey to maintain its presence in the South Caucasus and Middle East. The recent meeting of Çavuşoğlu with his Russian counterpart Sergei Lavrov in Ankara clearly showed that Turkey is keen to stick to mechanisms for cooperation with Russia, like the Astana Platform in Syria or the 3+3 format in the South Caucuses (which also involves Iran, Georgia, Armenia, and Azerbaijan). Instead of using this crisis as a chance to decrease its strategic dependence on Russia, Turkey seems eager to bind itself even more to Moscow within new formats. Money matters Ukraine has so far largely respected Turkey’s sensitivities and not pushed too hard on sanctions, instead focusing on arms supplies and Ankara’s mediator role. However, that dynamic is coming under stress with Russian oligarchs using Turkey as a safe haven to bypass European Union restrictions. According to Lavrov’s recent statements, Russia-Turkey bilateral trade doubled in the first quarter of 2022, and there are now ongoing talks on expanding the use of Russia’s MIR payments system in Turkey. In March, Erdoğan suggested to Putin that their countries switch to national currencies or gold in commercial deals instead of the dollar or euro. Izzet Ekmekcibashi, the head of the Turkish-Russian Business Council (DEIK), said that more than one thousand new Russian companies opened in Turkey in March alone. Most recently, a well-connected Turkish journalist reported on a Russian-Turkish agreement to move the European headquarters of forty-three leading Russian companies including Gazprom to Turkey. Turkish-Russian cooperation in tourism has also quickly developed. Turkish media outlets have reported that Turkish carriers are operating 438 flights per week to Russia this summer at a time when sanctions have made it difficult for Moscow to arrange flights. According to the pro-government Sabah newspaper, Turkish Airlines has signed a deal to bring 1.5 million Russian tourists over in 2022. The newspaper’s report suggests that Ankara also plans to issue loans under state guarantees to support Turkish travel companies working with Russian tourists and back a new airline with the specific mandate of transporting Russian tourists to Turkey. Ankara, which earlier called on Moscow to end its blockade of Ukrainian ports so grain exports could restart, is now taking a more pro-Russia position, advocating for the international community to help unblock not only Ukraine’s but also Russia’s trade in grain and fertilizers through safe logistics, ship insurance, and a return of Russian banks to the SWIFT system. During Lavrov’s recent visit to Turkey, Çavuşoğlu said that Turkey considered Moscow’s demands “reasonable” and “feasible” and backed easing Western sanctions against Russia. There is also ample evidence of Ankara’s involvement in the illegal shipment and trade of Ukrainian grain stolen by Russian forces to the Middle East via the Turkish ports of Samsun, Derince, Bandırma, and Iskenderun. So far, despite strong evidence of Russian crimes and official appeals from Ukraine, Turkish authorities have remained silent on these cases. These moves by Turkey don’t just undermine its credibility as a mediator between Ukraine and Russia but also raise questions about Ankara’s geopolitical choices in a broader regional and transatlantic framework. As it leans toward Russia in a bid for stability at home, Turkey risks finding itself estranged from the West and aligned with a pariah state on the international arena. The Ukrainian case will become a major test for Turkey. Whether Ankara prefers to use it to bridge the gaps with the West or to burn the bridges remains to be seen.

#### Anti-western sentiment ties Russia and Turkey together–NATO recentralization wrecks this relationship

Dalay 5-20 (Galip Dalay is a CATS Fellow at the Centre for Applied Turkish Studies (CATS) at SWP. (5-20-2022). Deciphering Turkey's geopolitical balancing and anti-westernism in its&nbsp;relations with Russia. Stiftung Wissenschaft und Politik (SWP). Retrieved July 1, 2022, from https://www.swp-berlin.org/en/publication/deciphering-turkeys-geopolitical-balancing-and-anti-westernism-in-its-relations-with-russia//BVN SC)

The war in Ukraine is set to increase the pressure on Turkey’s balancing policy, shed light on the role of anti-Westernism in Ankara-Moscow relations, and reshape Tur­key’s relations with Russia and the West. The balancing policy will face a less permissive environment. However, a rupture in Turkey-Russia relations is not to be expected. Given the prohibitive cost of a breakdown, Ankara will strive to maintain functional bilateral relations with Moscow. More broadly, despite the changed con­text, Turkey will continue to seek autonomy in its foreign and security policy. This quest precedes the balancing policy and was not driven solely by discontent with the West. It was also informed by Turkey’s reading of the global order becoming more multipolar and less Western-centric. In spite of similarities in their narratives, the Turkish and Russian anti-Westernisms manifest themselves differently in policy terms. Finally, Russia’s geopolitical revisionism is set to drive Turkey and the West relatively closer together in matters geopolitical and strategic, provided that Turkey’s current blockage of Sweden and Finland’s NATO membership bid is resolved in the not too distant future. The pace and depth of developments in Turkish-Russian relations since 2016 has been intriguing. Discontent with the West has been a major driver for rapidly improv­ing ties. In fact, one could argue that it was anti-Westernism that created Turkey’s geo­political balancing policy between Russia and the West, coupled with the understand­ing that a multipolar global order was in the making. The close relationship with Russia has led to further rifts between Tur­key and the West. However, despite their shared discontent with the West, Russian and Turkish anti-Westernism differ in nature, origin and manifestation. Turkish anti-Westernism tends to be selective and policy-focused, whereas the Russian version is more structural and encompassing. For instance, Russian For­eign Minister Sergey Lavrov spoke of ending US and western dominance of the inter­national system as the core goal of Russia’s invasion of Ukraine. Unlike Russia, Turkey also benefits from the Western-centric inter­national system it criticises. These differences carry major policy implications. The invasion of Ukraine has also injected a whole set of new dynamics into the Turkey-Russia-West triangle. Ankara’s geopolitical balancing policy is now entering difficult terrain, if not becoming unfeasible, as NATO and the West treat Russia explicitly as an enemy. The cost of such a policy is likely to increase. But even if balancing became unfeasible, Ankara would still strive to maintain some form of function­ing bilateral relationship with Moscow. Geopolitical Balancing Policy and Functional Bilateral Relations The major difference between Turkey’s geopolitical balancing policy and its quest to maintain functional bilateral relations with Russia is the scope of cooperation. A functional bilateral relationship meant cultivating economic, energy and political ties, but did not extend into the strategic realms of geopolitical and defence industry cooperation. Geopolitical balancing in­volves strategic cooperation, military pro­curement (purchasing the Russian S‑400 air defence system), and geopolitical engagement in conflict zones in Syria, Libya and Nagorno-Karabakh. The balancing policy is driven by discontent with the West and rests on a particular reading of global poli­tics, which Ankara sees becoming increas­ingly multipolar and less Western-centric (if not post-Western). It has also been informed by Ankara’s assessment that the West lacks internal cohesion, seeing signs of fragmentation between Europe and the United States (especially during the Trump presidency) and within Europe post-Brexit.

#### \*\*INSERT INTERNAL LINK CHAIN HERE\*\*

### 1NC – Turkish Economy Impact

#### Russia-Turkey relations are key to Turkish economy–the ties are deepening now BUT investment in NATO leaves Turkey in its most vulnerable state

Wheeldon 22 (03/31/2022 | Tom Wheeldon | ‘Turkey juggles relationships with Russia, Ukraine amid economic crisis’ | https://www.france24.com/en/middle-east/20220331-turkey-juggles-relationships-with-russia-ukraine-amid-economic-crisis | DOA: 7/6/2022 | SAoki)

‘Extremely vulnerable’ Turkey’s “economic crisis” is the “most important factor in its calculations”, Howard Eissenstat, a Turkey expert at St. Lawrence University in New York state and the Middle East Institute in Washington DC, put it to FRANCE 24. The Turkish lira lost 47 percent of its value over the past year, as prices soared by over 54 percent. This 20-year inflation high marked a new nadir in the currency crisis wracking Turkey since 2018, a crisis experts blame on Erdogan’s belief – contrary to all economic evidence – that higher interest rates cause inflation. Turkey does not want to “antagonise Russia”, Eissenstat noted, because it is “extremely vulnerable to a loss of Russian wheat, gas and oil”. Russia is in effect a vital trading partner for the beleaguered Turkish economy, providing 45 percent of its natural gas and a colossal 70 percent of its wheat. The latter is an especially high-priority import, seeing as escalating bread prices are a major source of discontent in Turkey. Russia is also Turkey’s biggest source of tourists, with its 4.7 million visitors accounting for 19 percent of all travellers to the country in 2021. ‘Competitive co-operation’ Historically, Turkey and Russia have a track record of antagonising each other, most notably when the clashing geostrategic manoeuvrings of Tsarist Russia and the Ottoman Empire saw them fight on more than 10 occasions from the sixteenth century to the twentieth century. At the outset of the Cold War, Kemalist Turkey’s axiomatic anti-communism and pro-Western ethos prompted it to join NATO and host US nuclear missiles, a major source of Soviet vexation until they were removed after the Cuban Missile Crisis. The most recent Russo-Turkish diplomatic crisis flared in 2015, when Turkey shot down a Russian jet near the Syrian border. But a formal apology from Erdogan soon ended Moscow’s retaliatory sanctions – inaugurating a rapid thaw in relations that weathered Russia and Turkey backing opposing sides in the Syria, Libya and Nagorno-Karabakh wars. This recent paradigm in Russo-Turkish relations is best described as “competitive co-operation”, the German Marshall Fund’s Unluhisarcikli said, in which supporting rival forces abroad “doesn’t prevent them from cooperating in the fields of energy and trade”. A year on from that swiftly resolved spat with Russia, a dramatic coup attempt sparked a pervasive crackdown as Ankara held responsible Islamic cleric Fetullah Gulen and his movement. Erdogan’s government felt the West was not supportive enough after this would-be putsch. Thus the failed coup set the stage for Turkey-Russia ties to deepen, explained Reilly Barry, a Turkey researcher at Harvard University. Following the putsch attempt, Russian President Vladimir Putin “successfully sowed more seeds of doubt into Erdogan’s mind that the West is not his ultimate protector and security assurance, and achieved his desired effect to create a wedge among NATO allies when Turkey purchased the S-400 missile system from Russia, a major red line for a NATO country to cross", Barry told FRANCE 24. “So, the Turkish government has formulated a stance on seeing Russia as a potential major power protector in cases when Western relations and alliances do not suit Turkey’s best interests.” In this context, “having been close with Russia and Putin lately more so than at any other time in recent history, it would make Turkey extremely vulnerable to be condemning Russia in the language that the US and Western European countries are”, Barry continued. “It is also important to remember the US and other countries do not share a sea with Russia and are not only separated by one other country [Georgia],” she added.

#### Turkish recession spills over globally–failed states, terror, prolif, and extinction

Kemp 10 (Geoffrey Kemp | *The East Moves West: India, China, and Asia’s Growing Presence in the Middle East*, p. 233-234 | DOA: 7/6/2022 | SAoki)

The second scenario, called Mayhem and Chaos, is the opposite of the first scenario; everything that can go wrong does go wrong. The world economic situation weakens rather than strengthens, and India, China, and Japan suffer a major reduction in their growth rates, further weakening the global economy. As a result, energy demand falls and the price of fossil fuels plummets, leading to a financial crisis for the energy-producing states, which are forced to cut back dramatically on expansion programs and social welfare. That in turn leads to political unrest: and nurtures different radical groups, including, but not limited to, Islamic extremists. The internal stability of some countries is challenged, and there are more “failed states.” Most serious is the collapse of the democratic government in Pakistan and its takeover by Muslim extremists, who then take possession of a large number of nuclear weapons. The danger of war between India and Pakistan increases significantly. Iran, always worried about an extremist Pakistan, expands and weaponizes its nuclear program. That further enhances nuclear proliferation in the Middle East, with Saudi Arabia, Turkey, and Egypt joining Israel and Iran as nuclear states. Under these circumstances, the potential for nuclear terrorism increases, and the possibility of a nuclear terrorist attack in either the Western world or in the oil-producing states may lead to a further devastating collapse of the world economic market, with a tsunami-like impact on stability. In this scenario, major disruptions can be expected, with dire consequences for two-thirds of the planet’s population.

### 1NC – Ukraine War Impact

#### Russia-Turkey relations key to Ukraine diplomacy and de-escalating tensions

ORUÇ 2-23 (MERVE ŞEBNEM ORUÇ, A political commentator, columnist, and a TV host mostly focusing on the Syrian civil war, Middle East, Turkish-American relations, and Turkish foreign politics as well, 2/23/33, “Turkey to preserve ties with Russia, Ukraine to de-escalate tensions”, https://www.dailysabah.com/politics/diplomacy/turkey-to-preserve-ties-with-russia-ukraine-to-de-escalate-tensions//RM)

President Recep Tayyip Erdoğan highlighted the necessity of maintaining calm and will maintain relations with both countries amid ongoing tensions between Russia and Ukraine as Moscow recognized the sovereignty of the separatist Donetsk People’s Republic (DPR) and the Luhansk People's Republic (LNR). Speaking to reporters on his way back from Senegal on Wednesday, Erdoğan said Turkey cooperates with both Russia and Ukraine and will not halt relations or plan to impose sanctions against Moscow. “We have political, military and economic relations with Russia. Same with Ukraine. We cannot give this up if you ask me because our country has high interests in this regard,” Erdoğan said. He noted that Turkey aims to resolve the issue without harming relations and will conduct talks with the Turkish delegation as soon as he returns home. Careful calculations need to be made to figure out the pros and cons of actions to be taken against Russia, Erdoğan said, noting that steps need to be taken in a delicate manner. “Some say the conflict will boost the costs of natural gas while others discuss turning off the valves. We need to take our steps with this sensitivity in mind,” he said, adding that Turkish officials are currently in contact with Russian counterparts to arrange a meeting. “We will continue phone diplomacy and I hope we achieve favorable results,” Erdoğan said. The president noted that he highlighted Turkey's stance regarding Ukraine's territorial integrity to Ukrainian President Volodymyr Zelenskyy in a recent phone call and that Turkey does not accept any actions violating the Minsk agreements. "I told him that we are ready to undertake the responsibility to ensure that the crisis is solved through diplomacy and dialogue," he said, adding that the ongoing tensions pose a threat to security in the Black Sea. "Our hope is for our Black Sea neighbors Russia and Ukraine to immediately return to the negotiation table," he added. Erdoğan continued by saying that he believes the planned NATO summit is quite important in this regard, as countries will discuss measures to be taken in light of Russia’s actions. He noted that he would hold another meeting with Russian President Vladimir Putin following the NATO summit. He criticized Western leaders for their ineffective talks with Putin. “As you know, Macron came to Moscow and you see the picture. Scholz followed him and you see that picture too,” Erdoğan said, adding that Biden was also supposed to speak with Putin, but no concrete results have been achieved so far. He noted that NATO was the only instrument left to display a common stance. “In this videoconference meeting, NATO needs to decide on its stance and do whatever necessary,” Erdoğan said, adding that no troops have been sent to Ukraine so far, but Russia has amassed soldiers near the Ukrainian border. “Of course, you don’t need to be an oracle to know what’s coming in the face of this picture,” Erdoğan said, adding that Turkey will display its final stance regarding the issue after the meeting. However, the president highlighted that Turkey has already sided with Ukraine regarding Russia’s annexation of Crimea and Putin’s recent recognition by rejecting it for violating Ukraine’s territorial integrity. NATO member Turkey, which shares a maritime border with both Ukraine and Russia in the Black Sea, has good ties with both its neighbors and has offered to mediate the crisis, while warning Moscow against invading Ukraine. Turkey has been closely following the developments and is in close contact with both Kyiv and Moscow. While forging cooperation on defense and energy, Turkey has opposed Moscow’s policies in Syria and Libya, as well as its annexation of the Crimean Peninsula in 2014. It has also sold sophisticated drones to Ukraine, angering Russia. Russian President Vladimir Putin on Monday signed decrees to recognize the sovereignty of Luhansk and Donetsk, known as the Donbass, at a televised event in which he delivered a fiery speech questioning Ukraine's right to statehood. Putin also instructed Moscow's Foreign Ministry to establish formal diplomatic relations with the two areas held by pro-Russia rebels, which are part of the Donbass region and belong to Ukraine under international law.

#### Ukraine war escalation goes nuclear

Brookes 3/31 (Peter Brookes, Senior Research Fellow, Center for National Defense, Peter researches and develops Heritage’s policy on weapons of mass destruction and counter proliferation, Mar 31st, 2022, How Russia Might Deploy Nukes in Ukraine War, https://www.heritage.org/global-politics/commentary/how-russia-might-deploy-nukes-ukraine-war//RM)

With Russian forces struggling mightily to subjugate Ukraine in the face of incredible resistance from both the Ukrainian army and ordinary citizens, observers are concerned about the Kremlin escalating the war with the use of nuclear weapons. At this point, it’s arguably “low risk,” but it’s not “no risk.” Moscow could certainly decide to move the war from conventional to nuclear at any time. As such, we must take the threat of the use of Russian nuclear weapons very seriously, surveil it intensely, and prepare for the possibility of a nuclear event. But under what circumstances might Russia use a nuke against Ukraine—or as part of the Ukraine conflict? Dmitry Medvedev, former Russian president and current deputy chairman of the Russian Security Council, outlined Moscow’s policy on using nuclear weapons in an interview Saturday, according to The Guardian: Number one is the situation when Russia is struck by a nuclear missile. The second case is any use of other nuclear weapons against Russia or its allies. The third is an attack on a critical infrastructure that will have paralyzed our nuclear deterrent forces, and the fourth case is when an act of aggression is committed against Russia and its allies, which jeopardized the existence of the country itself, even without the use of nuclear weapons, that is, with the use of conventional weapons. That’s relatively clear, but that’s not all. Russia also has a secretive “escalate to deescalate” doctrine for the use of nuclear weapons that Medvedev didn’t mention—unsurprisingly—in that list of four conditions. This unspoken possibility is perhaps the most likely scenario of all. Let’s face it: The war isn’t going well for Vladimir Putin & Co. What the Kremlin thought would be a three-day dash to Kyiv has turned into a monthlong slog, which has seen Russian forces losing general officers, troops, and equipment at an alarming rate. The outcome—once thought to overwhelmingly favor Moscow—is up for grabs. That state of affairs doesn’t bode well for the Kremlin and its cronies. Even authoritarian leaders care about public opinion at home and the effect it might have on the regime’s control over the country. Losing the war in Ukraine would have repercussions on Russia internationally, too, including significant reputational costs, likely diplomatic pariah status, punishing economic costs, and a demoralized, depleted military. In other words, losing in Ukraine will be plenty painful for Putin and his pals—and this is when, unfortunately, the use of nuclear weapons potentially comes into play for the Russians. Indeed, Putin might use a nuke (or more) in an (as yet unproven) “escalate to deescalate” plan for advancing Russia’s unjust goals in Ukraine. Although there is debate about the effectiveness of using a nuke on the battlefield in Ukraine, alternatively Russia could pop off a low-yield, tactical (aka battlefield) nuke over an unpopulated area, or even the Arctic Ocean. The point would be to send a clear signal to the U.S., NATO, and others who are supporting the Ukrainian political and military resistance that their backing must end—immediately. If they choose otherwise, the risk would be that Moscow might escalate from a single, low-yield battlefield nuke over an unpopulated territory to high-yield theater or intercontinental-range nukes targeting populated areas in these countries. The Kremlin might calculate that Ukraine’s supporters (e.g., NATO) don’t have the political will to risk a wider conflict or chance a move up the nuclear-escalation ladder. Ukraine’s backers—and Ukraine itself—would have to make some fateful choices. Using the “escalate to deescalate” nuclear stratagem, Moscow potentially could force any number of advantageous political and military outcomes to the war in Ukraine, including a victory that avoids the unpleasantries of a loss. Of course, the use of a nuclear weapon in war for the first time since World War II is a troubling idea to contemplate. But we must understand that the Russian political and military playbook includes pages on the use of nukes. Consequently, we must consider Russia’s use of nuclear weapons a real possibility, monitor the movement of Russian nuclear forces with vigor, and prepare for making the tough choices that the possibility of a nuclear event would bring.

### 2NC – UQ

#### Russia-Turkey relations are high now–BUT they are on the brink

**The European Institute for International Law and International Relations, 7-5**-20**22**, "How do Russia and Turkey manage to maintain a privileged relationship despite their differences on many issues?," European Institute for International Law and International Relations, https://www.eiir.eu/international-relations/europe/how-do-russia-and-turkey-manage-to-maintain-a-privileged-relationship-despite-their-differences-on-many-issues///DS

First of all, the good personal chemistry between the two presidents plays its role. Putin and Erdogan are both adepts of speaking frankly, and they present this as an asset in inter-state relations, making it possible to overcome differences and blockages. In fact, each time the different stands they have on Syria, Armenia, NATO, Libya… threatened to reach the point of crisis, the two heads of state met or spoke to each other, finding an agreement to overcome it while acknowledging the persistent disagreements. Erdogan and Putin also agree on the way they treat opposition in their respective countries, which is brutal to say the least. They both also agree on the strongman image they intend to project, both internally and on the international scene. A turning point in the closeness between the two presidents was Putin’s expressed support for Erdogan after the failed coup in 2016, while Western countries, for their part, criticized the massive repression that followed that event in Turkey. What role does the West play in the current convergence between Moscow and Ankara? This is another major point of convergence between the two countries. Wether one sees it negatively or positively, and with obviously very different historical contexts, both countries consider that the West has refused their will of cooperation and integration. They also believe that their Western partners have ignored their security interests as they see them. For example, on the Kurdish question for Turkey, the enlargement of NATO for Russia. Turkey, like Russia, is interested in the idea of a less Western-centric multipolar world, in which regional powers see their role enhanced. But the anti-Western posture is clearly more structural in the case of Russia (which sees itself as a global power) than in the case of Turkey (who wants to extend its influence but on different regional scales). Thus, for Russia we are dealing with questions of principle, of world vision. For Turkey we are probably dealing with something more situational, more fluid because it is more negotiable, and this can constitute a fragility in the bilateral relationship. This is perhaps why the Russians have been keen, over the last decade, to involve Turkey in economic cooperations that have a strategic scope, creating long-term dependence (nuclear, energy…). The rejection of Western policies is ultimately a common objective. Syria, Libya, the Caucasus – topics where the interests of Ankara and Moscow are far from fully converging. But the one objective of marginalizing Western countries, and showing the decline of their authority on the international scene reconcile them. During the Nagorno-Karabakh conflict in 2020, the Minsk group (of which France and the United States are co-chairs with Russia) was not very active and the ceasefire agreement was steered exclusively by Russia and consultations with Turkey. Considering the tensions with the Europeans in the eastern Mediterranean, Turkey sees it as useful to be able to display a capacity for coordination with Russia. As for Moscow, it likes to emphasize the spirit of cooperation that governs its relations with Ankara in the Black Sea. Turkey has positioned itself in the Black Sea as a littoral power tending to oppose the plans of Alliance members who are pushing for a stronger NATO presence. This, of course, suits Russia. Turkey has developed its relations with Kiev, affirming its support for the territorial integrity of Ukraine, condemning the annexation of Crimea and developing Ukrainian-Turkish arms projects. What impact does the war in Ukraine have on relations between Russia and Turkey? Before the war, Russian officials have repeatedly denounced the arms cooperation between Turkey and Ukraine. Turkey also participated in the first summit of the “Crimea Platform”, initiated by Ukraine August 2021, in Kiev. As long as this policy is not explicitly part of a NATO strategy towards Ukraine, Moscow can accept the development of Ukrainian-Turkish ties. But when Russia complained, before the war in Ukraine, about the development of cooperation between the latter and the Nato countries, and if it was mainly aimed at the role of the Americans or the British, it also had in mind the Turkish drones. For the moment, Turkey gives the impression of remaining in its posture of Russia-West balance : it condemns the invasion, it closes the straits to warships, but it does not take sanctions against Russia, continues to work with it in the economic field, and seeks to pose as a mediator. Everything depends on what Turkey wants to do with the opportunity that the war in Ukraine potentially represents for it: continue its game of balance between the West and the Russians as in recent years; or repair its relations with its NATO allies? It seems that the first option prevails at this stage – let’s not forget that Turkey is very dependent on Russia economically (energy, tourism…). It seems to want to make its usefulness known to the various players in the context of this war, which is upsetting many balances, and to gain an additional regional and international aura from it (and to make people forget its economic crisis?). To what extent does the desire to expand their respective influences constitute limits to their political and economic cooperation? So far, the two actors are playing in the same arena, sometimes with more or less serious friction. But their order of priorities is different. For Turkey, it is the Middle East and the Mediterranean, while Russia’s foreign policy remains focused on maintaining its weight in the ex-Soviet space. This could change if Turkey were to become more enterprising in this space that Russia claims as its sphere of influence. Moscow is keeping a tight rein on Ankara’s desire to develop its presence in Central Asia in the name of historical, linguistic and cultural kinship. Above all, with the war in Ukraine, one wonders if Turkey, a member of NATO, will be able to continue for long on its line of a transactional attitude in which it plays the Russian card in its negotiations with its Western partners, and the anti-Western card in its power relations with Moscow. Correct relations with Turkey are perceived in Moscow as an asset in relation to several major strategic issues. The impression has often been given that Turkey is more or less leading the game. Meaning, on the international stage, and in particular in its relations with Western countries and some of its neighbors, Russia has not exactly shown flexibility lately, with an often offensive, if not aggressive, behaviour. In this context, the manifest effort of Russian diplomacy to find points of agreement with a Turkey that does not hesitate to impose its pace and its interests offers a striking contrast! This is because correct relations with Turkey are perceived in Moscow as an asset in relation to several major strategic issues. The Black Sea-Mediterranean stage is a key issue. Russia proceeds by priorities : Turkey is not a convenient partner in Syria (where it tends to take advantage, at present, of the Russian withdrawal linked to the war in Ukraine), but this is acceptable, as long as it remains on the right line in the Black Sea, an arch-strategic zone for Moscow. However, one of the major objectives of Russian foreign policy in recent years has been to divide by all means the NATO alliance, which it sees as strong militarily but weak politically. Hence the efforts to quickly complete the contract for the sale of the S-400 anti-aircraft system. One of the reasons why Ankara worked to improve its relationship with Moscow was probably its perception that its Western allies would not necessarily be of much help in the event of a problem with Russia, and that it was therefore necessary to manage and stabilize this relationship as best as possible in autonomy. Regardless the extremely controversial democratic system reigning in Turkey, this is more “looking out for themselves” behaviour than “challenging NATO” behaviour.

#### Turkey is siding with Russia now

Paul T. Levin 19, is docent in International Relations and the founding director of the Stockholm University Institute for Turkish Studies, “What’s Driving Turkey’s Foreign Policy?,” 10/24/19, https://tnsr.org/roundtable/policy-roundtable-the-future-of-turkeys-foreign-policy//BVN SC

At the risk of oversimplification, it may be useful to talk of an emerging global struggle between two forms of governance: liberal democracy and oligarchical authoritarianism. There are still meaningful differences between the West on the one side, and Russia and other oligarchical authoritarian states on the other — despite the emergence of Trump and other conservative-nationalist populists in power in countries like Hungary. Thus, while it may be misleading to speak of a new Cold War, there does appear to be a new ideological divide emerging between Russia and the West that has a clear national security dimension. If this continues over the coming decade, Turkey will face the same question as during the Cold War: Which side is it on? In light of the transformations that have occurred in the Turkish foreign policy elite, it seems much more likely for Turkey to side with Russia this time around. There are strong affinities between the Russian and Turkish models of governance today, and leaders in both countries share a desire to be liberated from the interference of Western governments, non-governmental organizations, and international institutions concerned with internal matters such as human rights and freedoms. They both have ambitions to be more than leaders of mere subservient states on the periphery of Western institutions. Russia wants respect as a world power,111 Turkey as a formidable regional power. And there are also significant push factors in Turkey’s relations with the West. Unless there is a regime transformation in Turkey, it is likely to continue to diverge from its traditional Western allies.

### 2NC – UQ – AT: Russia Isolated

#### Russia not isolated–space program proves

Reuters 4-12 (Reuters is an international news agency owned by Thomson Reuters. It employs around 2,500 journalists and 600 photojournalists in about 200 locations worldwide. Reuters is one of the largest news agencies in the world. The agency was established in London in 1851 by the German-born Paul Reuter, 4-12-22, “Impossible to isolate Russia, or hold it back: Putin warns the West”, Business Standard, <https://www.business-standard.com/article/international/putin-warns-the-west-russia-cannot-be-isolated-or-held-back-122041200700_1.html//BVN> SC)

President Vladimir Putin warned the West on Tuesday that attempts to isolate Moscow would fail, citing the success of the Soviet space programme as evidence that Russia could achieve spectacular leaps forward in tough conditions. Russia says it will never again depend on the West after the United States and its allies imposed crippling sanctions on it to punish Putin for his Feb. 24 order for what he called a "special military operation" in Ukraine. Sixty one years to the day since the Soviet Union's Yuri Gagarin blasted off into the history books by becoming the first man in space, Putin travelled to the Vostochny Cosmodrome in Russia's Far East, 3,450 miles (5550 km) east of Moscow. "The sanctions were total, the isolation was complete but the Soviet Union was still first in space," Putin said, according to Russian state television. "We don't intend to be isolated," Putin said. "It is impossible to severely isolate anyone in the modern world - especially such a vast country as Russia." Russia's Cold War space successes such as Gagarin's flight and the 1957 launch of Sputnik 1, the first artificial satellite from earth, have a particular pertinence for Russia: both events shocked the United States. The launch of Sputnik 1 prompted the United States to create NASA in a bid to catch up with Moscow. Putin says the "special military operation" in Ukraine is necessary because the United States was using Ukraine to threaten Russia - including via the NATO military alliance - and that Moscow had to defend Russian-speaking people in Ukraine from persecution. He said on Tuesday that the had no doubts Russia would achieve all of its objectives in Ukraine - a conflict he cast as both inevitable and essential to defend Russia in the long term. "Its goals are absolutely clear and noble," Putin said. "It's clear that we didn't have a choice. It was the right decision." Ukrainian forces have mounted stiff resistance and the West has imposed sweeping sanctions on Russia in an effort to force it to withdraw its forces. Russia's economy is on track to contract by more than 10% in 2022, the biggest fall in gross domestic product since the years following the 1991 fall of the Soviet Union, former finance minister Alexei Kudrin said on Tuesday. Putin toured the space port in Russia's far east with Belarusian President Alexander Lukashenko. "Why an earth are we getting so worried about these sanctions?" Lukashenko said, according to Russian state television. Lukashenko, who has a track record of sometimes saying things that appear to jar with his closest ally's stated positions on a range of issues, has insisted that Belarus must be involved in negotiations to resolve the conflict in Ukraine and has said that Belarus had been unfairly labelled "an accomplice of the aggressor".

#### Russia cannot be isolated from the rest of the world

Reuters 3-5 (Reuters is an international news agency owned by Thomson Reuters. It employs around 2,500 journalists and 600 photojournalists in about 200 locations worldwide. Reuters is one of the largest news agencies in the world. The agency was established in London in 1851 by the German-born Paul Reuter, 3-5-22, “"Russia Too Big To Be Isolated": Kremlin On Sanctions By US, Europe”, NDTV, <https://www.ndtv.com/world-news/west-engaged-in-economic-banditry-russia-not-isolated-says-kremlin-2805444//BVN> SC)

London: The Kremlin said on Saturday that the West was behaving like bandits but that Russia was far too big to be isolated as the world was much larger than just the United States and Europe. Kremlin spokesman Dmitry Peskov told reporters that the West was engaged in "economic banditry" against Russia and that Moscow would respond. He did not specify what response there would be but said it would be in line with Russian interests. "This does not mean Russia is isolated," Peskov told reporters. "The world is too big for Europe and America to isolate a country, and even more so a country as big as Russia. There are many more countries in the world." Peskov said that if the United States imposed sanctions on Russia's energy exports then it would give a considerable jolt to energy markets.

### 2NC – Link

#### Turkey within NATO enables Russian aggression–cohesion makes Russia worse

MICHAEL RUBIN 19, resident scholar at the American Enterprise Institute, “It’s Not Us—It’s Him,” https://www.the-american-interest.com/2019/12/03/its-not-us-its-him//BVN SC

Turkey’s recent turn toward Russia is a reflection of Erdoğan’s animosity toward America. To suggest Erdoğan pragmatically seeks to get the best deal for his country by forcing Washington and Moscow to bid for Turkey’s affection misses the point. First, the idea of NATO is collective defense in times of crisis, not an opportunity for members to launch bidding wars for cash, concessions, or contracts. Second, to apologize for Erdoğan’s tilt toward Russia ignores his embrace or promotion of pro-Russian aides and allies like military counselor Adnan Tanrıverdi or politician and activist Doğu Perinçek, a paramount influence among Turkey’s top brass, an unabashed critic of NATO, and a supporter of both Russia and a Eurasian alliance. After Israel intercepted the Mavi Marmara, a Turkish-owned ship seeking to run Israel’s blockade and support Hamas, killing nine Turks in the process, Erdoğan threatened to use every international forum to undercut Israel. Erdoğan now uses the same tactics against the United States and NATO: Rather than simply withdraw from an alliance that he appears to despise, Erdoğan seeks to cripple it from within. NATO is a consensus driven organization, so Turkey and its Russian backer gain more leverage from filibustering its processes than by simply leaving the alliance. That there is no mechanism within NATO to expel a member only strengthens Turkey’s leverage. Turkey may remain a member of NATO, but its strategic pivot toward Russia shifts the balance toward Moscow across the entire Black Sea region, allowing Russia to further solidify its strategic encroachment on Georgia and Ukraine.

#### Turkey-Russia diplomacy on the brink –Western cooperation undermines it

Mankoff 3-10 (Jeffrey Mankoff is a distinguished research fellow at the U.S. National Defense University’s Institute for National Strategic Studies specializing in Russian and Eurasian affairs and a nonresident senior associate at the Center for Strategic and International Studies. He is the author of the forthcoming book, Empires of Eurasia: How Imperial Legacies Shape International Security, 3-10-22, “Turkey’s Balancing Act on Ukraine Is Becoming More Precarious”, Foreign Policy, <https://foreignpolicy.com/2022/03/10/turkey-ukraine-russia-war-nato-erdogan//BVN> SC)

Russia’s invasion of Ukraine has upended the geopolitical calculations of countries around the world. For Turkey, a NATO member that has performed a delicate balancing act between Kyiv and Moscow, the war is forcing some hard choices. Like his World War II-era predecessor Ismet Inonu, Turkish President Recep Tayyip Erdogan seeks to keep Turkey out of today’s conflict as much as possible, while maximizing his own room to maneuver. Amid the escalating conflict and humanitarian disaster, however, Ankara faces growing pressure to pick sides. Turkey faces a range of vulnerabilities from either an emboldened or a desperate Russia. Erdogan’s strategy therefore centers on supporting Ukraine without jeopardizing ties with Moscow. Over the longer term, the course of the war itself will do much to determine how Ankara maintains this balancing act. Strong, unified NATO support for Ukraine, along with Russian military setbacks, would provide the best opportunity to reinforce Ankara’s commitment to Ukraine—and to the alliance. Russia and Turkey have for centuries been rivals across a wide geographic space encompassing the Balkans, the Caucasus, the Black Sea, and Central Asia. Vulnerability to Russian military power throughout these regions has encouraged Turkish leaders to seek allies: Britain and France in the Crimean War, Germany in World War I, and NATO in the Cold War. When the international environment has been less threatening, though, Turkey has looked to Russia (and the Soviet Union) for economic opportunities and as a partner for boosting its own strategic autonomy. The Soviet Union’s collapse created a series of buffer states (including Ukraine) that shielded Turkey from Russian military power, allowing Ankara to pursue a more forward-leaning policy in Eurasia. It also opened up new opportunities for Turkish companies in Russia, which became a major source of tourists to Turkey’s Mediterranean resorts as well as a lucrative market for exporters and construction companies (many with close ties to Erdogan’s Justice and Development Party). Turkey also turned to Russia for energy, at one point getting the majority of its natural gas from Russia, and signing a deal with Russia’s state-owned Rosatom to build Turkey’s first nuclear power plant at Akkuyu. Ties with Russia also allowed Ankara to hedge against what it perceived to be excessive dependence on the West amid tensions over Washington’s role in the Syrian conflict. Erdogan’s purchase of the Russian-made S-400 air defense system after he was unable to strike a deal with the United States for the Patriot system sent a message to Turkey’s NATO allies that Ankara had other options. Some voices in Turkish political and military circles would like to go further, seeing Russia’s pursuit of a non-Western security order in Eurasia as preferable to continued dependence on NATO. Improved relations with Moscow also reflected a growing closeness between Erdogan and Russian President Vladimir Putin, who was the first foreign leader to call Erdogan after the failed 2016 coup attempt, and whose strongman rule contrasted with mounting U.S. and European criticism over Turkey’s democratic backsliding. Russia and Turkey nevertheless remain geopolitical rivals. Their forces and proxies have clashed repeatedly—in Syria, Libya, and the South Caucasus. In February 2020, Russian forces (or Russian-backed Syrian forces) bombed Turkish positions near Idlib, Syria, killing over 30 Turkish soldiers. Nor was Russia the only target of Turkey’s Eurasian outreach. Ukraine is also important to Turkey as both an economic and a geopolitical partner. Trade between the two countries has increased rapidly since Ukraine’s 2013-2014 Revolution of Dignity, reaching $7.4 billion in 2021. Ankara and Kyiv also signed a free trade agreement on the eve of the most recent Russian invasion. Since 2019, Turkey has also supplied Ukraine with military assistance, notably the Bayraktar TB2 armed drones that were instrumental in Azerbaijan’s victory over Russian ally Armenia in Nagorno-Karabakh and that have inflicted significant casualties on Russian-backed forces in both Libya and the Donbass. During Erdogan’s visit to Kyiv at the start of February, the two countries agreed to set up a factory to produce drones inside Ukraine. Turkey’s security is much better served by an independent Ukraine than a Ukraine under Russian military-political domination. Further territorial changes at Ukraine’s expense would allow Moscow to bolster its naval presence along the northern Black Sea coast. (Russia’s post-2014 militarization of Crimea has already tipped the balance of power in the Black Sea against Turkey.) While the bulk of refugees fleeing Ukraine have so far gone westward, a longer conflict could also send refugee flows to Turkey, a country still struggling with the effects of large-scale migration from Middle Eastern conflicts. Turkey also remains susceptible to Russian retaliation. Despite some diversification in recent years and new offshore discoveries, Turkey is dependent on Russia for the bulk of its gas and a significant percentage of its oil. With Turkey’s inflation likely to be above 40 percent for the year, turbulence in energy markets could have damaging effects not just on Turkey’s economy but on Erdogan’s political fortunes ahead of elections next year. Even with its military tied down in Ukraine, Russia retains the capacity to hit back at Turkish interests. Idlib remains a particular liability, packed as it is with refugees and a motley collection of rebels who would likely flee for the Turkish border in the event of an offensive on the city. Because of all this, and because its relationship with Moscow is important to Erdogan’s larger geopolitical ambitions, Turkish support for Ukraine has been real—but cautious. On the first day of the conflict, Erdogan characterized the Russian attack as “unacceptable” and “contrary to international law.” Turkey has since reiterated long-standing commitments to Ukraine’s sovereignty and territorial integrity (including Crimea, the annexation of which Ankara has insisted it will never recognize). Yet many Turkish statements during the first week or so of the conflict lacked the moral clarity of those from its Western counterparts, instead calling on both Russia and Ukraine to find a diplomatic solution. With the conflict worsening and Western unity holding, Ankara grew slightly bolder. In a March 6 telephone call with Putin, Erdogan called for a cease-fire, the opening of a humanitarian corridor, and a peace agreement. Turkey has also continued to supply both humanitarian assistance and military equipment to Ukraine. Perhaps its most visible contribution has been continuing to supply drones to Ukraine—deflecting Russian criticism with the disingenuous claim that such sales are purely private transactions. At Ukrainian President Volodymyr Zelensky’s request, Turkey also agreed to invoke the 1936 Montreux Convention, which allows Ankara to regulate the passage of warships through the Bosphorus and Dardanelles straits—the first time since World War II it has done so. The decision required a formal determination that the Russia-Ukraine conflict qualified as a war—thereby rejecting Putin’s description of a “special military operation.” Effectively, the decision to invoke Montreux means that Turkey can prevent Russia from reinforcing its naval forces already present in the Black Sea with ships based outside the Black Sea. (The bulk of Russia’s navy remains engaged in the Eastern Mediterranean off Syria.) Particularly if the conflict drags on, closure of the straits could degrade Moscow’s naval and amphibious capabilities. Still, Turkey’s rhetoric remains cautious, and it continues its policy of engagement with Moscow. Erdogan has spoken with Putin on multiple occasions since the start of the war, and Russian Foreign Minister Sergey Lavrov is set to attend the Antalya Diplomacy Forum in Turkey later this week, where he plans to meet his Ukrainian counterpart, Dmytro Kuleba.

### 2NC – AT: Ukraine Thumper

#### Turkey and Russia are tied together through their anti-West ideologies–key to maintaining their relations despite ALL other divisions

Bardakçı 21 (Mehmet Bardakçı, 12-6-21, “Is a Strategic Partnership Between Turkey and Russia Feasible at the Expense of Turkey’s Relations with the EU and NATO?”, Comparative Southeast European Studies, https://www.degruyter.com/document/doi/10.1515/soeu-2021-0001/html?lang=en//BVN SC)

The article mainly contends that since the real and expected benefits from the European Union (EU) and NATO were not delivered sufficiently from Turkey’s perspective, Turkey looked for alternatives and collaborated with Russia more intensely in recent years. Turkey’s cooperation with Russia was also facilitated by several global, political, economic, conjectural, security-related, and individual-level factors. Another argument of the study is that despite Turkey’s intensive collaboration with Russia, it is not feasible for Turkey to build a strategic partnership with it in the short- and medium-term at the expense of its relations with NATO and the EU. The main reasons for this are, in addition to the institutional and social shortcomings, geostrategic divergences, Russia’s inadequacy as an economic actor, the pitfalls of an asymmetric relationship with Russia, the security risks posed by Russia, NATO’s continuing importance for Turkey’s security needs, and the incompatibility of Russia’s and Turkey’s political systems. Keywords: EU; NATO; Russia; strategic partnership; Turkish foreign policy Introduction The arrival of the Russian S-400 air defence system in Turkey in July 2019 was welcomed enthusiastically by many in Turkey. This breakthrough event was even described by some in Turkey as the “country’s liberation from the West” (Tol and Taşpınar 2019, 107). Almost a decade ago, the question started to be asked as to whether Turkey was drifting away from the West, especially since it had approached Iran and voted against sanctions on Iran over its nuclear programme in the United Nations Security Council (UNSC) as well as clashed with Israel over the Mavi Marmara incident in 2010. This time, however, this question is more pronounced and the likelihood of a strategic shift became more tangible with the arrival of a weapon system from a country that has been confronting the West recently. Given that Turkey’s relations with the United States and the European Union (EU) have been at a nadir in recent years, many regarded the acquisition of the Russian weapon system as a precursor of Turkey’s withdrawal from the North Atlantic Alliance (North Atlantic Treaty Organisation, NATO) and the EU. In addition to many other factors, Moscow’s and Ankara’s bitter relations with the West are a major reason why the two countries have closed ranks in recent years. A milestone for Moscow’s relationship with the West was its annexation of Crimea in March 2014 while the coup plot against the Justice and Development Party (Adalet ve Kalkınma Partisi, AKP) government in Turkey in July 2016 marked a watershed in Ankara’s relations with the West. Russia had to confront a series of economic sanctions from the West after 2014 while Turkey was deeply disappointed with its Western allies for their slow and reluctant condemnation of the coup attempt. Ankara has even aired doubts that the West might have been behind the coup attempt. These events have helped peak the two countries’ deeply-ingrained sense of distrust towards the West. As one observer put, “Despite their obvious differences and even antagonisms, Russia and Turkey are united by one thing—the fact that they are two great powers connected historically, culturally, and geographically to a Europe that never fully accepted them as one of their own” (Lukyanov, People with Big Ambitions, The Moscow Times, 19 July 2016). A major objective of this article is to unpack the puzzle of whether Russia could replace the EU and NATO as a strategic partner for Turkey. The article contends that in addition to some factors facilitating the Russo–Turkish rapprochement, Turkey searched for alternatives, collaborating with Russia owing to the decline in the real and expected benefits from the EU and NATO from the Turkish perspective. Another major contention of this article is that despite the close collaboration between Moscow and Ankara, in particular after the coup attempt against the Turkish Government in July 2016, it is hard for Turkey to forge a strategic partnership with Russia because of significant divergent geostrategic interests, Russia’s inadequacy as an economic actor, the downsides of an asymmetric relationship with Russia, the security risks posed by Russia, the continuing importance of NATO for Turkey’s security as well as the incompatibility of Turkey’s and Russia’s political systems. Moreover, the absence of a solid social basis and the lack of institutionalization in their relations further make it infeasible for Turkey to switch from the Transatlantic Alliance to Russia. The study is divided into three sections. The first part concerns the motives that brought Moscow and Ankara together, including, first and foremost, their strained relationship with the West, economic interests, conjectural factors such as the Syrian conflict, transformation of the global governance system, and similarity of their political culture based on security and personal harmony between the leaders. The second part draws attention to the limitations in the relationship, and the third part explains why a strategic partnership between Turkey and Ankara and at the expense of Turkey’s partnership with the EU and NATO is not feasible in the foreseeable future. Finally, the conclusion wraps up the article.

### 2NC – Turkish Economy Internal Link

#### Turkey-Russia relations help the Turkish economy–no Turkish sanctions on Russia prove

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Turkish Foreign Minister Mevlut Cavusoglu said on Sunday on the margins of the Antalya Diplomacy Forum that Ankara will not join Western sanctions against Russia. “We did not join sanctions as a matter of principle and have no intention of joining [them],” Cavusoglu told a press conference. Cavusoglu said sanctions will not resolve problems and will damage the Turkish economy. “Our counterparts ask whether we will join these sanctions, and we explain to them how these sanctions will affect our economy and [business] sectors,” he said. Turkey continues to follow an ambiguous policy towards Russia following its February 24 invasion of Ukraine. It has condemned the Russian invasion and continues to have ties with Ukraine, but will not sanction Moscow or close its airpsace to Russian planes. Ankara helped to equip the Ukrainian army, most prominently with armed drones, which have resulted in heavy Russian casualties recently. Turkey hosted the first first high-level meeting between Russia and Ukraine last week in Antalya. The talks, attended by Russian Foreign Minister Sergey Lavrov and Ukrainian Foreign Minister Dmytro Kuleba, did not result in any breakthroughs but the two sides agreed to continue talks. “There is nothing to replace the negotiation process,” Lavrov told reporters after the meeting. The invasion of Ukraine started on February 24. However, the success of the Russian military is being questioned and the Ukrainian army and people have resisted more than was expected. Russia is meanwhile being hit by record-heavy Western sanctions, which aim to cripple its economy and businesses. According to the UN, more than 2.3 million Ukrainians have fled the country, seeking shelter in neighbouring countries, as Russia pounds major Ukrainian cities, including the capital, Kyiv, the second-largest city, Kharkiv and the port of Mariupol.

### 2NC – Yes Turkish Recession

#### Turkish economic decline spills over to other European banks

Arbaa & Varon 19 (Ofer Arbaa: Department of Economics and Management, Ruppin Academic Center, Emek Hefer, Israel, Eva Varon: Graduate of Masters in Finance, London Business School, London, UK, December 2019, “Turkish currency crisis – Spillover effects on European banks”, <https://www.sciencedirect.com/science/article/pii/S2214845018304010#!//BVN> SC)

In this paper, we aim to analyze the impact of the Turkish lira currency shock on the stock returns of 29 major banks in Europe. Literature after the global economic crisis of 2008, deals mostly with the financial spillovers of shocks in the US or Europe to emerging markets rather than vice versa and on a macro level (Stracca, 2014; Kim, Kim, & Lee, 2015; Chen, Filardo and Zhu, 2016; Fadejava, Feldkircher, & Reininger, 2017; Fratzscher, Duca and Straub, 2016). As a result, we look at data on some of the largest banks in Europe from both high and low risk economies. Our results illustrate the investors' sentiment of how resilient banks would be to possible bank defaults with spillover effects. The stocks of the overall banking sample react negatively to the crisis in Turkey and results indicate that banks that recently increased their leverage or experienced a decrease in liquidity or profitability have also been subject to higher abnormal losses on the event day and a day after the event, where the losses in general were the most severe. Nevertheless, leverage, liquidity and performance ratios are by themselves not sufficient to assess the financial soundness of banks, since the risk is more related to the quality than the quantity of the assets they carry. Across countries, we find Greece, Italy and Spain, the three economies of PIIGS analyzed in this paper, to be significantly related to the Turkish currency shock. Banks of Greece show the highest abnormal losses, which indicates that geographical proximity can be a factor in speculative attacks and/or crisis spillovers. Moreover, banks located in countries with lower systematic risk such as Germany, Netherlands and France react strongly to the Turkish lira crisis. Therefore, investors do not appear sensitive to whether a bank is operating in a less or more healthy banking system. In addition, losses of banks are not necessarily proportionate to the size of their exposures, with the exception of Turkish banks, which have been the most vulnerable. Spanish and Italian banks, which carry the largest amount of loans extended to Turkey do not seem to display the highest abnormal losses among the European banks. German banks, on the other hand, have no subsidiaries in Turkey and their claims are small relative to their capital (2.4%) and yet they disclose significant abnormal losses. In fact, the underlying risk resulting from banks' exposures to Turkey is difficult to assess, as there are many indirect factors that might influence the operation of banks such as other country and industry-specific risks. German, Dutch and French banks could be vulnerable to the extent that their economies will support the ailing financial system in other EU areas. UK and Switzerland, which are considered as outsiders of the EU financial system (the former in the process) appear to be immune to these pressures and therefore their banks are found relatively stable. We conclude that foreign banks' lending practices may be a source of instability in their financial markets even when a shock originates in a relatively small economy to which the banks have direct or indirect exposure. The role of banks in transmitting disturbances from emerging markets across borders is of increasing relevance with the presence of international banks and emerging markets with greater openness in their ﬁnancial sectors. To better understand this phenomenon, further research would be useful that analyzes the response of individual bank balance sheets and lending decisions to such shocks from the emerging economies.

#### Turkey spills over to the US–empirics prove, happened in 2018

Reuters 18 (Reuters is an international news agency owned by Thomson Reuters. It employs around 2,500 journalists and 600 photojournalists in about 200 locations worldwide. Reuters is one of the largest news agencies in the world. The agency was established in London in 1851 by the German-born Paul Reuter, 8-10-18, “US STOCKS-Turkey turmoil spills over to Wall St, shaves 200 pts off Dow”, <https://www.reuters.com/article/usa-stocks-idCNL4N1V14VI//BVN> SC)

Aug 10 (Reuters) - The Dow Jones Industrial Average fell more than 200 points on Friday amid a widespread selloff in global stocks as the Turkish lira tumbled due to concerns over the country’s economy and a deepening rift with the United States. President Donald Trump doubled tariffs on aluminum and steel imports from Turkey, deepening the currency’s losses and raising concerns that the crisis could weigh on other economies. “Problems in emerging markets are more important than ever because of the global growth engine that emerging markets have become,” Peter Cecchini, chief market strategist at Cantor Fitzgerald in New York, wrote in a note. “This will eventually matter greatly to U.S. markets.” Investors fled to safe-haven assets, with the dollar rising to a 13-month high and U.S. bond yields slipping to a three-week low. Ten of the 11 major S&P sectors were lower, with bank stocks taking the biggest hit. “Banks are leverage plays on the global economy. Anytime there’s a sniff of contagion they will be weak,” said Michael Antonelli, managing director, institutional sales trading at Robert W. Baird in Milwaukee. JPMorgan, Wells Fargo and Bank of America fell more than 1 percent, weighing the most on the benchmark S&P 500. At 9:48 a.m. EDT the Dow Jones Industrial Average was down 158.88 points, or 0.62 percent, at 25,350.35, the S&P 500 was down 13.35 points, or 0.47 percent, at 2,840.23 and the Nasdaq Composite was down 31.69 points, or 0.40 percent, at 7,860.09. S&P technology sector’s 0.42 percent fall was led by chipmakers. Intel dropped 2.6 percent after Goldman Sachs downgraded the stock to “sell”. Micron also fell 1.1 percent. Microchip’s shares fell 10.5 percent, the biggest decliner on the S&P, after it forecast disappointing second-quarter revenue. Data on Friday showed U.S. consumer prices rose in July and the underlying trend continued to strengthen, pointing to a steady increase in inflation pressures. Declining issues outnumbered advancers for a 2.34-to-1 ratio on the NYSE. Declining issues outnumbered advancers for a 1.85-to-1 ratio on the Nasdaq. The S&P index recorded 4 new 52-week highs and 7 new lows, while the Nasdaq recorded 33 new highs and 45 new lows.

### 2NC – Ukraine War Internal Link

#### Turkey mediates the Ukraine conflict–even Russia agrees

Atlantic Council 22 (Atlantic Council IN TURKEY provides analysis and insight on Turkey and related developments with coverage from Turkish, regional, and international experts. This blog offers timely news and commentary on key issues related to transatlantic relations, energy, business, migration, and key players, February 25, 2022, “Experts react: What does the Russia-Ukraine conflict mean for Turkey?”, https://www.atlanticcouncil.org/blogs/turkeysource/experts-react-what-does-the-russia-ukraine-conflict-mean-for-turkey//BVN SC)

For several weeks, President Erdoğan and Foreign Minister Mevlüt Çavuşoğlu have been offering Turkey as a potential mediator between Russia and Ukraine. President Zelenskyy consistently welcomed this offer as part of his increasingly desperate search for any way to derail President Putin’s planned invasion. While Kremlin spokesman Dmitriy Peskov (a Turkey specialist who began his diplomatic career in Ankara) initially rejected the offer, the Kremlin subsequently reversed course and said Turkey’s mediation might be useful if it resulted in Ukraine coming into compliance with the Minsk Protocol (despite Russia being in serious breach of the same agreement). Putin, however, clearly favored military escalation rather than mediation, consigning the Minsk agreement to the dustbin of failed European diplomacy. Unlike Germany and France, co-leaders of the Minsk process, however, Turkey has a centuries-old history of confronting and cooperating with Russia. Ankara has been an outspoken supporter of Ukraine’s territorial integrity and a critic of Russia’s annexation of Crimea and developed a significant program of cooperation with Kyiv on military technology, while also retaining effective relations with Russia on energy, agricultural trade, and tourism as well as some key defense technologies (e.g., S-400 air defense systems). It is therefore possible Turkey could have a meaningful mediation role to play once Putin finishes his illegal and unprovoked invasion of Ukraine, which the Russian president will use to strengthen Russia’s position in the political negotiations that will come at the end of this war in Ukraine, as happens with all military conflicts.

#### Turkey-Russia relations are key to de-escalation of Ukraine

Cuhadar and Diaz-Prinz 22 (Esra Çuhadar, Ph.D.; Dr. Esra Çuhadar is a senior expert for dialogue and peace processes at the U.S. Institute of Peace, Juan Diaz-Prinz, Ph.D., Dr. Juan Diaz-Prinz is a senior expert on mediation and dialogue at the U.S. Institute of Peace, April 28, 2022, “To Sustain Hopes for Peace in Ukraine, Keep an Eye on Turkey”, <https://www.usip.org/publications/2022/04/sustain-hopes-peace-ukraine-keep-eye-turkey>//RM)

Russia’s atrocities against Ukrainian civilians and its escalated warfare in southeastern Ukraine have swept aside last month’s public discussion of peace options as the countries briefly held talks in Turkey. Yet even in the darkest moments, all sides in this war, including the United States and Europe, have strong interests in maintaining channels for negotiation that can be used when opportunity re-emerges. Protecting that interest means understanding and maintaining Turkey’s role in facilitating talks—and its potential to serve more actively as a mediator. By at least some norms of peace processes, Turkey is an atypical mediator—but policymakers would do well to note strengths, not widely recognized, that it can bring to this role. While analysts have suggested China, Israel, India and others as possible mediators—and while no options should be ignored—Turkey has emerged as the most immediately useful go-between. It is no accident that Turkey was Kyiv’s and Moscow’s preferred choice for their brief attempts at negotiations in March. By design, Turkey’s role in those talks was limited to facilitation, providing a secure space and even-handed treatment of Russian and Ukrainian negotiators, but without injecting Turkish observations or proposals. Particularly for Russia, Turkey can seem like an illogical choice as mediator. It is not neutral between the combatants, but rather is a member of NATO, which Russia’s government has declared an enemy. Turkey has supported Ukraine with humanitarian gestures, evacuating some 16,000 civilians from combat zones and receiving nearly 60,000 Ukrainian refugees so far. It has even sold Turkish-built, armed, aerial drones that Ukrainians have deployed against Russian ground offensives. Also, Russia and Turkey have had their own conflicts, both historically and in recent years. Yet part of Turkey’s utility as an interlocutor for Russia may be some of these very qualities. Any eventual Russian-Ukrainian agreement will need acceptance—and likely, reconstruction funds—from the United States and Europe. As a NATO member, Turkey can offer influence with its U.S. and European allies in securing that support. Turkey has built credibility by developing a specific capacity for mediation over recent decades, and by showing itself to Russia and Ukraine as an independent actor that, while a NATO member, is not unduly influenced by the United States or Europe. Even now, with heightened battlefield violence and accusatory rhetoric from both sides, Turkey is continuing its go-between role. Its diplomats are continuing meetings with both sides separately and keeping lines of communication open. This creates an asset for managing, and hopefully limiting, the conflict—one that policymakers should not ignore.

#### Turkey plays a key role in Ukraine

Dalay 22 (Galip Dalay, Galip Dalay is associate fellow, Middle East and North Africa Programme, Chatham House. He specializes in Turkish politics and Middle Eastern affairs. The views expressed in this commentary are his own. Read more opinion on CNN, March 29, 2022, “Why Turkey is in a unique position to mediate”, <https://www.cnn.com/2022/03/29/opinions/turkey-mediator-russia-ukraine-dalay/index.html>//RM)

As Russian and Ukrainian delegations arrive Tuesday in Istanbul for peace talks, Turkey's unique political position is under the spotlight. Could the nation that straddles Europe and the Middle East emerge as peacemaker? As the war grinds on, a growing list of countries are exploring the possibility of mediating, stepping in to avert further bloodshed and the conflict spreading beyond Ukraine's borders. Earlier this month, Turkey hosted Ukrainian and Russian foreign ministers for a trilateral meeting in its southern city of Antalya. Afterward, the Turkish foreign minister visited both Moscow and Kyiv. Likewise, Israeli Prime Minister Naftali Bennett visited Moscow for the same purpose. And China has signaled readiness for mediation. Potentially other countries, such as the United Arab Emirates, India or South Africa, might get in line to broker some kind of resolution. Almost all countries that have vied for the mediation role have also engaged in a strategic balancing act between the West and Russia for some time. Serving an intermediary role is a way for them to prevent further catastrophe in the conflict, and project international stature. But it is also a way for them to avoid making difficult choices the war might force upon them, such as choosing or tilting toward one side more clearly. But the list of fence-sitters in the Russia-Ukraine conflict is not confined to mediators. Many more countries have chosen to remain "neutral," including Egypt, Saudi Arabia, Pakistan and Morocco. The rationale for abstaining differs between countries, but some reasons cut across. The international system is changing. And the idea that the world is no longer Western-centric, and increasingly multipolar, is widespread in the non-Western world. It informs their policies toward Russia, and toward China as well. As long as the dominant narrative of this war is put in a West/NATO versus Russia dichotomy, it will have little resonance in the non-Western world. Plus, the fence-sitting approach is also a way of signaling discontent with the US/Western policy. It was illustrative that the rulers of the UAE and Saudi Arabia, who depend on the US for their security, refrained from taking calls from President Joe Biden earlier this month. This snub was meant to convey their displeasure with the United States for Washington's insufficient support for their botched Yemen campaign. From food and energy supplies to geopolitical vulnerabilities, many other factors also define their approach. For instance, in spite of its close military ties with the US, Egypt depends heavily on Moscow in terms of its food security. It also closely cooperates with Russia in Libya, with both supporting the warlord Khalifa Haftar. (Kyiv accuses Haftar of sending mercenaries to aid Russia in Ukraine.) Likewise India, in spite of needing the West as a countervailing force against China, has long maintained close ties with Moscow; has purchased the Russian-made S-400 missile systems; and has pursued a policy of balancing between Russia and the West. ut of all these countries sitting on the fence and trying to mediate, Turkey has a unique profile and position. It is a NATO member, an organization for which Russia and previously the Soviet Union served as raison d'être or the foundational threat. Turkish President Recep Tayyip Erdogan has been increasingly castigating the Western-centric international system. But as a member of many Western institutions, Turkey is also a beneficiary, and in a sense, part of the geopolitical West. Meanwhile, Turkey also has maritime borders with both Ukraine and Russia. Plus, Turkey is Russia's largest trade partner in the Middle East and North Africa region. And it has competed and cooperated with Russia through conflict zones in Syria, Libya and Nagorno-Karabakh in recent years. Compared to other contenders for mediation, Turkey has the highest stakes in this conflict. The war is fundamentally changing the geopolitics and balance of power in the Black Sea region, and Turkey is a major Black Sea power. Turkey will probably play a humanitarian role soon, too, as the number of refugees -- already in the millions -- rises. French President Emanuel Macron's announcement that France, Turkey and Greece will undertake a joint evacuation mission in Mariupol is a harbinger of a humanitarian role that might become more salient in Erdogan's policy down the road. In spite of its policy of not provoking Russia, Turkey is simultaneously not pursuing a policy of equidistance. It sells armed drones to Ukraine, which are exacting significant losses on Russian targets, and has closed the Turkish straits to warships. In addition to Russia dominating the Black Sea, it has a sizable Mediterranean presence where it is deeply involved in conflicts spots in Syria and Libya. Turkey's sea closure will put pressure on Russian policy in these conflict zones if the war is prolonged. Yet unlike other NATO members, Turkey has neither joined the Western sanctions against Moscow nor closed its airspace to Russia. Doing so would have probably triggered a Russian veto against Turkey's quest for mediating the conflict. And there are an increasing number of anti-war Russian activists and pro-Kremlin figures heading to Turkey. Turkey is basically trying to be pro-Ukraine without becoming too aggressively anti-Russia. Its capital city, Ankara, is too deeply exposed to Russia both economically and geopolitically. Russia is Turkey's largest source of tourists, grain imports and gas. In any case, at this stage, there is not yet any sign of the West pushing Turkey more strongly in joining the sanction regime against Moscow. And despite Turkey's efforts, the conflict is not ripe for mediation yet, because Moscow still appears to be hellbent on the military option. This does not mean that efforts or talks will cease in this conflict; to the contrary, we are likely to see more. Russia wants to give the impression it is interested in diplomacy to buy time and prevent further Western sanctions, but to no avail. No breakthrough should be expected anytime soon. In spite of this, keeping the idea of a diplomatic process alive is still important. Plus, the mediation serves Turkey's interests well. It boosts its international stature; turns Turkey into one of the major centers of diplomacy in this conflict; and delays some of the difficult decisions that it might face down the road. hat said, as the war drags on, Turkey's previous strategic juggling act may no longer be feasible, particularly as Russia is now more openly treated as an enemy of NATO and European security. From imperial Ottoman times to the present, Turkey and Russia have fought each other 13 times, but they have also cooperated. In the past, grievances vis-à-vis the West, or even anti-Westernism, have usually driven them closer to each other. Now, Russia's geopolitical revisionism and Putin's dramatic shift in post-Soviet ambitions will drive an uneasy Turkey closer toward the West.

### 2NC – Yes Nuclear Ukraine

#### Ukraine goes nuclear

Bender 3-24 (Bryan Bender is a senior national correspondent for POLITICO, where he focuses on the Pentagon, NASA, and the defense and aerospace industries. He was previously the national security reporter for the Boston Globe, where he covered U.S. military operations in the Middle East, Asia, Latin America, and the Balkans. He also writes about terrorism and government secrecy. He is an adjunct professor at the Walter Cronkite School of Journalism at Arizona State University and the author of “You Are Not Forgotten,“ the story of an Iraq War veteran’s search for a missing World War II fighter pilot in the South Pacific, 3-24-22, “How the Ukraine war could go nuclear”, POLITICO, https://www.politico.com/news/2022/03/24/how-ukraine-war-could-go-nuclear-00019899//BVN SC)

Not since the Cold War has the specter of nuclear war hung so heavily over a president’s crisis diplomacy. As President Joe Biden meets with fellow NATO leaders, calls for a ceasefire in Ukraine are growing more urgent than ever — to alleviate the widespread human suffering but also to dial back what veterans of nuclear planning consider an alarming potential for it to spiral into a clash of atomic superpowers. The nuclear brinkmanship from Russian President Vladimir Putin in recent weeks is unprecedented: He ordered a snap nuclear war game before the invasion and days later put his nuclear forces on high alert. And the Kremlin has repeatedly signaled it could resort to nuclear weapons — an option explicitly reserved in Russian military doctrine — if it determines the West’s intervention in the conflict goes too far. Again on Tuesday, in an interview with CNN, Putin’s chief spokesperson refused to rule out the use of nuclear arms in the conflict. So far, Biden has sought to dial down the tensions. The Pentagon has not changed the alert status of U.S. nuclear forces and military leaders have publicly said they have not detected Russian actions suggesting they are preparing to use nuclear weapons. The Pentagon also took the unusual step early in the conflict of putting off a regularly scheduled test of an intercontinental ballistic missile to avoid fueling nuclear tensions. Yet as the conflict drags on, and Russia’s conventional forces suffer surprisingly heavy losses while its economy reels, the prospect that Putin might resort to using weapons of mass destruction is increasing. Moscow has already demonstrated that it’s willing to use hypersonic missiles for the first time in a war. State Department: 'Russia's forces are committing war crimes in Ukraine' SharePlay Video With limited contact between the Kremlin and Western capitals, the risk that Moscow’s intentions could be misread with catastrophic consequences will only grow more acute, according to numerous specialists. “There has always been a chance of mistakes, but I think the chances are much higher,” said former Sen. Sam Nunn, the longtime chair of the Armed Services Committee and now co-chair of the nonprofit Nuclear Threat Initiative. “I think we are in a different era in terms of blunders.” It is a high-wire act confronting Biden as he tries to stiffen the spines of NATO countries for what is expected to be a long struggle. Allies are helping Ukraine fend off its bigger aggressor — including sending more arms and U.S. troops to defend NATO’s eastern borders — while not pushing Putin over the edge. Russia invaded Ukraine as cooperation between Washington and Moscow on nuclear arms control has been unraveling in recent years. The two countries have walked away from several treaties to control the deadliest weapons, including one that outlawed intermediate-range nuclear missiles that could threaten Europe. The only remaining nuclear pact between the two sides is the New Strategic Arms Reduction Treaty, which limits deployed strategic weapons to 1,550 each. Biden and Putin agreed last year to extend it until 2026. But the treaty does not cover any of the thousands of smaller, or “battlefield,” nuclear weapons in their respective arsenals, including at least 2,000 in Russian stockpiles, according to public estimates. Gas prices, nuclear talks and hacking: What Russia sanctions mean in America SharePlay Video Two Defense Department officials, who spoke on condition of anonymity, say they are vigilantly gathering intelligence on Russian military moves for any sign that it might be taking such weapons out of storage or preparing for deployment units trained in nuclear or chemical warfare. ‘Raising the ante’ Longtime observers of Russian nuclear policy have been startled at how reckless the Putin regime has been with its nuclear threats compared to leaders in Moscow during the Cold War. “The communist party of the Soviet Union was incredibly disciplined about this,” said Rose Gottemoeller, a former undersecretary of state for arms control who has negotiated treaties with Russians and served as NATO deputy secretary general from 2016 to 2019. “There were only a few Soviet leaders who were allowed to speak about nuclear doctrine and strategy, and they did so in a very carefully scripted way. MOST READ YYMMDD\_Template\_Producer.00\_02\_39\_17.Still015.jpg New Jan. 6 Trump documentary footage revealed U.S. military’s newest weapon against China and Russia: Hot air The Southwest is bone dry. Now, a key water source is at risk. Capitol Police say a Jan. 6 defendant’s demands could expose secret security features Shadow 2024 race: Newsom vs. DeSantis “We are in a more difficult crisis than anyone could have predicted with this constant nuclear saber-rattling that has been going on,” she added. “We have to take what [Putin’s] people say seriously, because he was serious about invading Ukraine when many of us hoped he would turn away at the last minute.” Vladimir Putin The nuclear brinkmanship from Russian President Vladimir Putin in recent weeks is unprecedented: He ordered a snap nuclear war game before the invasion and days later put his nuclear forces on high alert. | Adam Berry/Getty Images The dearth of diplomacy and growing distrust only fuels the risk of “mushroom clouds appearing on the battlefield,” Izumi Nakamitsu, United Nations high representative for disarmament affairs, warned on Tuesday. She hearkened back to the numerous instances during the decades-long standoff between the United States and then-Soviet Union when the two sides nearly came to nuclear blows. But diplomacy — and a good bit of luck — prevailed. “We are all aware of the close calls and near-misses,” she said at an event hosted by The Stimson Center. “Unfortunately, I fear we have forgotten many of those difficult lessons. A simple glance at a headline today can point to how acute nuclear risks have become.” Those concerns are shared across the spectrum by advocates for nuclear disarmament and those who believe a more robust U.S. nuclear arsenal is needed to deter adversaries. “I really am worried here that the war is going so badly for Putin … it raises the possibility of Putin feeling like he needs to escalate to win his way out of this conflict,” said Tim Morrison, a former Trump White House nuclear policy adviser who is now a researcher at the Hudson Institute, a hawkish think tank. That, he continued, “is right in the wheelhouse of Russian [military] doctrine for a low-yield nuclear or even chemical [weapons] use.” Morrison added that he fears the situation could unravel to the point where Putin is “raising the ante, climbing the rungs of the escalation ladder to make the point to NATO ‘hey, you guys really need to knock it off with arming the Ukrainians, I will no longer tolerate this.’” Russia has already ratcheted up the war with its hypersonic missile launch in Ukraine last week, and it has also been accused of dropping phosphorus bombs, which are banned under the Geneva Convention (though using the chemical to obscure troop movements or illuminate targets is not). “A simple glance at a headline today can point to how acute nuclear risks have become.” Izumi Nakamitsu, United Nations high representative for disarmament affairs NATO Secretary General Jens Stoltenberg said on Wednesday the alliance will be assisting Ukraine with specialized equipment in the event of a Russian attack with chemical, biological or nuclear weapons. Gottemoeller said she fears that Moscow’s use of a tactical nuclear weapon is a serious possibility. “Putin is capable of anything,” she said. “He could declare there is an existential threat from a NATO ally resupplying the Ukrainians.” ‘You’re not going to necessarily know’ Others worry less about Putin ordering a nuclear attack and more about a miscalculation leading to the use of nuclear weapons. Nunn has been sounding the alarm about the threat of an accidental nuclear exchange as a result of a cyber attack on nuclear command-and-control systems — including by malign actors not directly involved in the conflict who could be confused for a nuclear adversary. “Third parties, third countries, might interfere in terms of command-and-control or warning systems,” he said of potential hackers. “Interference in command-and-control could be taken in this kind of atmosphere as probably a deliberate act.” Nunn successfully lobbied Congress last year to require the Pentagon to conduct a “failsafe review” of the U.S. nuclear arsenal “to prevent cyber-related and other risks that could lead to the unauthorized or inadvertent use of nuclear weapons as the result of an accident, misinterpretation, miscalculation, terrorism, unexpected technological breakthrough, or deliberate act.” Further complicating the task of U.S. and allied commanders to decipher Russian intentions, said Morrison, is the fact that so many Russian battlefield systems are also designed to unleash both conventional and nuclear or chemical warheads. In other words, it could be exceedingly difficult to know when the Russian military has decided to pursue a nuclear option. “One of the problems with Russian nuclear forces is how many of their systems are dual-capable,” Morrison said. “So you’re not going to necessarily know if the S-300 or that long-range [missile or artillery] battery is packing a conventional warhead or a nuclear one.” US Ambassador to UN: 'The world narrowly averted a nuclear catastrophe last night' SharePlay Video If U.S. military leaders detected Russian nuclear maneuvers, Nunn said, Biden may have no choice but to act more aggressively to deter Moscow, including putting American nuclear forces on alert. “If you’d seen bombers in the air, all sorts of activities in the nuclear forces, it would have been a different proposition,” Nunn said. “The risk of nuclear use is in my view higher through a mistake or blunder than through intent. But nevertheless blunders get more likely when nuclear weapons are put on alert.”

#### Russia is currently making slow advances in Ukraine – NATO tech support throws advances off

Dan **Lamothe and** Adela **Suliman**, **06-24-**20**22**, [(Dan Lamothe joined The Washington Post in 2014 to cover the U.S. military. He has written about the Armed Forces for more than 14 years, traveling extensively, embedding with each service and covering combat in Afghanistan numerous times.) "Ukraine retreats from Severodonetsk as Russia advances in the east," Washington Post, https://www.washingtonpost.com/world/2022/06/24/severodonetsk-troop-withdrawal-ukraine-lysychansk/]//MaizeDS

Russia claimed control Sunday over the key city of Lysychansk, the last major Ukrainian foothold in the Luhansk region — signaling a potential turning point in Moscow’s campaign to take all of eastern Ukraine. Ukrainian officials said their forces had withdrawn from Lysychansk after fierce fighting to preserve lives from the Russians’ relentless assault. The slow Russian advance across the region it has targeted since the invasion began in February has been facilitated by overwhelming artillery power that has leveled cities and towns and left a trail of wounded and dead prompting comparisons with the devastation of World War I in Europe. Russian Defense Minister Sergei Shoigu said in a statement that Russian troops and pro-Kremlin separatists of the self-declared Luhansk People’s Republic “have established full control” over Lysychansk “and a number of nearby settlements.” The Ukrainian military’s general staff said Sunday that Ukrainian forces were forced to withdraw from Lysychansk after waging a stiff but losing battle. Ukraine had tried to defend Lysychansk for weeks. The military said it decided to withdraw because remaining in the city would bring “fatal consequences,” given the Russian forces’ “overwhelming advantage” in “artillery, aviation, ammunition and personnel.” The decision was “made to save the lives of Ukrainian defenders,” according to a statement posted on Facebook. Ukrainian President Volodymyr Zelensky vowed to return. “If the command of our army withdraws people from certain points of the front where the enemy has the greatest fire superiority, in particular this applies to Lysychansk, it means only one thing: We will return thanks to our tactics, thanks to the increase in the supply of modern weapons,” Zelensky said in his nightly address Sunday. “Ukraine does not give anything up.” The city is a key target in Russia’s battle to capture the Donbas region, the heavily industrialized area bordering Russia that is partly controlled by separatists loyal to Moscow. In 2014, they unilaterally established two independent “republics” in the Donbas region. ‘They’re in hell’: Hail of Russian artillery tests Ukrainian morale Russian President Vladimir Putin cited false claims of Ukrainian “genocide” against Russian-speaking residents there as justification for his invasion. Russia’s latest advances in eastern Ukraine add to creeping doubts among U.S. lawmakers and observers of the war that the Ukrainian government can stop Putin from seizing territory. Optimism sparked by the defeat of his forces in the battle for Kyiv in the spring has faded as Russian artillery hammers Ukrainian forces and civilian targets. As Ukraine war bogs down, U.S. assessments face scrutiny President Biden said last week that U.S. support for Ukraine is unshakable and will continue “as long as it takes” to ensure a Russian defeat. “We continue to fight. Unfortunately, the steel willpower and patriotism are not enough to achieve success — we need the technical resources,” the Ukrainian military’s statement added. Why is Ukraine’s Donbas region a target for Russian forces? Ukrainian troops withdrew just over a week ago from Severodonetsk, a city across the Donets River to the east. Russia’s capture of Lysychansk, if confirmed, would be a major victory that gives its troops clear access to Donetsk, the other region that makes up Donbas. Biden administration officials say Putin’s gains have been uneven and have come at a significant cost, highlighting the steep death toll among Russian troops. But Ukrainian forces also are paying a heavy price, which U.S. military officials rarely acknowledge. Ukraine retreats from Severodonetsk as Russia advances in the east Control over Donbas is the primary goal of Moscow’s military operation in Ukraine, after it failed to capture the capital, Kyiv, and other areas in the initial weeks of the war. Russian troops and their allies have been making steady gains in the east, as officials in Kyiv say they are outgunned and running out of ammunition. Ukrainian Defense Ministry spokesman Yuriy Sak told the BBC earlier Sunday that Ukraine controls other cities in Donetsk and argued that “the battle for the Donbas is not over yet.” Serhiy Haidai, governor of the Luhansk region, said earlier in the day that in attacking Lysychansk, Russian fighters used tactics even more brutal than in Severodonetsk to overcome resistance. Photos showed bombed-out residential buildings in Lysychansk early Sunday, amid a barrage reminiscent of the destruction of Severodonetsk. As recently as Saturday, a Russian-backed politician said Lysychansk was “completely surrounded,” but defense officials in Ukraine said they still had control of the city. Those counterclaims were probably “outdated or erroneous,” according to an analysis from the Washington-based Institute for the Study of War (ISW) think tank. It cited unconfirmed videos showing Russian forces erecting a red “victory” flag in Lysychansk and “casually walking around” its neighborhoods. “Ukrainian forces likely conducted a deliberate withdrawal from Lysychansk, resulting in the Russian seizure of the city on July 2,” it said. As Russia issued its claim of control over Lysychansk on Sunday, Slovyansk, a town about 50 miles west in Donetsk, came under intense shelling that killed at least six people, local officials said. Mayor Vadym Lyakh said in a video on Telegram that “the biggest shelling of Slovyansk recently” had left “a large number of wounded and dead.” Tetyana Ignatchenko, a spokeswoman for the Donetsk region, told Ukrainian public broadcaster Suspilne News that at least six people were killed and 15 were injured in the shelling. She added that missiles hit the town of Kramatorsk, to the south of Slovyansk. In its assessment Saturday, the ISW said Russia was likely to fully take over the Luhansk region “in coming days” and would probably “then prioritize drives on Ukrainian positions in Siversk before turning to Slovyansk and Bakhmut,” in Donetsk. In other developments, Ukraine’s ambassador to Turkey said Sunday that Turkish authorities have detained a Russian-flagged cargo ship loaded with stolen Ukrainian grain. Millions of metric tons of grain await export from Ukraine, blockaded by Russia’s control of Black Sea shipping lanes. The export blockades have resulted in global food shortages and rising prices, which have particularly affected poorer countries. Three people were killed in Russian strikes early Sunday in the Kharkiv region, Ukrainian officials said. Cities across Kharkiv were shelled Saturday and Sunday, according to regional governor Oleh Synyehubov. In one district, Russian forces “burned farm buildings, garages, and shelled open areas,” he added. Russian forces have recently intensified their attacks on Kharkiv, and some Ukrainians worry that Moscow is planning to renew its stalled attempt in March to seize Ukraine’s second-largest city.

#### NATO success causes Russia to use tactical nukes in Ukraine – escalates to full nuclear war

Gordon **Corera**, 04-26-20**22**, [(Gordon is the BBC's security correspondent. He covers terrorism, cyber-security, spying and other related issues in the UK and around the world. Before taking on the role in 2004 he worked for the Today program on Radio 4 as a foreign reporter. Gordon joined the BBC in 1997. He has presented documentaries and written a number of books relating to espionage and security.) "Ukraine war: Could Russia use tactical nuclear weapons?," BBC News, https://www.bbc.com/news/world-60664169]//MaizeDS

Soon after Russia invaded Ukraine, President Vladimir Putin said he was moving his "deterrent forces" - meaning nuclear weapons - to "combat ready" status. This has raised fears that Moscow could use "tactical" nuclear weapons - not an all-out nuclear war, but still a dramatic development. Tactical nuclear weapons are those which could be used over relatively short distances. This distinguishes them from "strategic" nuclear weapons. In the Cold War, these were the bombs which the two superpowers, the US and Soviet Union, could launch over long distances at each other's homeland. The term "tactical" nevertheless incorporates many types of weapon, including smaller bombs and missiles used as "battlefield" weapons. Russia is thought to have about 2,000 tactical nuclear weapons. These can be placed on various types of missiles which are normally used to deliver conventional explosives. They can even be fired as artillery shells on a battlefield. They have also been developed for aircraft and ships - for instance torpedoes and depth charges to target submarines. These warheads are believed to be in storage facilities, rather than deployed and ready to fire. But one concern is that Russia could be more willing to use smaller tactical weapons than larger strategic missiles. "They might not see it as crossing this big nuclear threshold. They could see it as part of their conventional forces," says Dr Patricia Lewis, head of the international security programme at the Chatham House think tank. Tactical nuclear weapons vary enormously in size and power. The smallest can be one kiloton or less (equivalent to a thousand tonnes of the explosive TNT) - the larger ones perhaps as big as 100 kilotons. The effects would depend on the size of the warhead, how far above the ground it detonates and the local environment. But as a comparison, the atomic bomb that killed around 146,000 people in Hiroshima, Japan, during World War Two, was 15 kilotons. Russia's largest strategic weapons are thought to be at least 800 kilotons. President Putin has made more than one reference to Russia's nuclear weapons - apparently to try to create a sense of fear. US spies see this as a signal to the West to persuade it not to intervene more in Ukraine, not as a sign he is planning nuclear war. But others worry that even though the chances are low, it is possible Russia, in certain conditions, might be tempted to use a smaller tactical weapon in Ukraine. "Putin is comfortable in the 'stability-instability' world, while the West is deterred by his nuclear bluster as if Nato's billion-dollar deterrent is nothing but a paper tiger," tweeted Dr Mariana Budjeryn, a nuclear expert with the Belfer Center for Science and International Affairs, at the Harvard Kennedy School. US intelligence say Russia has a theory called "escalate to de-escalate" if it is in a conflict with Nato. This involves doing something dramatic - such as using a tactical weapon on the battlefield, or as a demonstration somewhere - or threatening to do so. The idea is to frighten the other side into backing down. The concern is that if Putin feels cornered and that his strategy in Ukraine is failing, he could use tactical nuclear weapons as a "game changer", to break a stalemate or avoid defeat. But the situation would likely have to get worse in Ukraine - or back in Russia - for him to consider this. James Acton, a nuclear expert at the Carnegie Endowment for International Pace in Washington DC, says: "I am legitimately worried that in that circumstance Putin might use a nuclear weapon, most likely on the ground in Ukraine to terrify everyone and get his way. We are not at that point yet." Dr Heather Williams, nuclear expert at Kings College London, says one problem is that it is unclear what "winning" in Ukraine would look like for Putin - and thus what might drive Russia to use a nuclear weapon. Putin claims Ukraine is part of Russia, so using nuclear weapons on its territory seems bizarre. Russia itself is close by and "the fallout could cross boundaries", warns Patricia Lewis. The only time nuclear weapons have been used in conflict was by the US at the end of World War Two against Japan. Would Putin want to become the first leader to break the taboo and use them? Some worry he has shown a willingness to do things others thought he would not do, whether invading Ukraine or using nerve agent in Salisbury. Dr Williams says there is a further reason why Russia might not use nuclear weapons - China. "Russia is heavily dependent on Chinese support, but China has a 'no first use' nuclear doctrine. So if Putin did use them, it would be incredibly difficult for China to stand by him. If he used them, he would probably lose China." No one knows quite where the use of tactical nuclear weapons would lead. It could escalate and Putin would not want nuclear war. But miscalculation is always a risk. "They would imagine everyone would capitulate," says Patricia Lewis. "What would happen is that Nato would have to come in and respond." The US says it is monitoring the situation closely. It has an extensive intelligence gathering machine to watch Russian nuclear activity - for instance whether tactical weapons are being moved out of storage, or if there is any change in behaviour at launch sites. So far, they say they have not seen any significant changes. How the US and Nato would respond to any nuclear use is hard to predict. They may not want to escalate the situation further and risk all-out nuclear war but they also might want to draw a line. This might mean a tough conventional rather than nuclear response. But what would Russia then do? "Once you have crossed the nuclear threshold, there is no obvious stopping point," says James Acton. "I don't think anyone can have any confidence of what that world would look like."

## DA – Politics

### 1NC – Link

#### Political conflict turns attention away from regulating cognitive biotechnology AND compromise is impossible.

**Harris 15** (Rebecca C. Harris, "State responses to biotechnology", Spring 2015, https://www.jstor.org/stable/pdf/26372743.pdf?refreqid=excelsior%3A7aa7a4f1f56ddff9ef907449efce68c7&amp;ab\_segments=&amp;origin=, Spring 2015, Accessed 7-5-2022)//ILake-SG

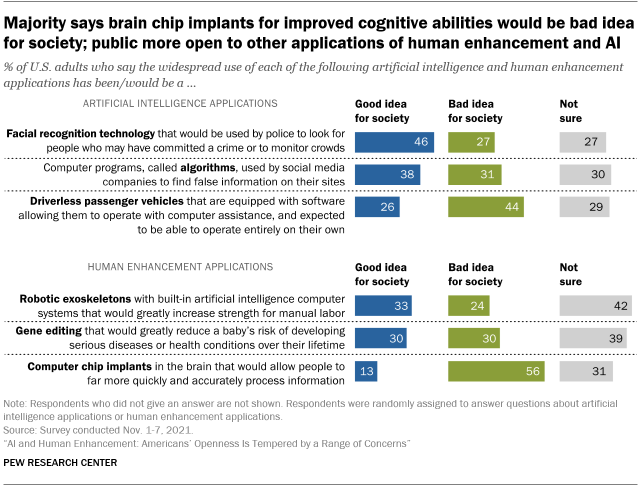
State ideology was also correlated with the timing of state legislative response relative to other states. As the state innovation literature suggested, liberal states appeared more likely to pioneer genetic policy approaches. Conservatives, on the other hand, were more likely to adopt policies late, and they were more likely to ‘‘go further’’ when they did act. Also of interest, both groups were morally suspicious of biotechnology use. Liberals were morally suspicious of genetic technology and law enforcement. Conservatives were morally suspicious of genetic technology and biomedicine (human cloning) and genetic privacy. Also of interest is the way ideology did not separate states on certain types of programs. For instance, state promotion of biotech using tax credits or state grants was popular among all types of state actors. Similarly, biotech regulation in the form of GMO permits was found evenly in both liberal and conservative states. The political identity of biotechnology has significant policy implications. If science or technology comes to be defined as a partisan issue, public policy will become a battle of partisan values and concerns over its use. This is warranted in a deliberative society but might become a tool of political competition rather than a discussion on the merits. A related factor is the unwillingness to compromise on moral or partisan issues, when compromise is actually quite a prudent approach. One has only to witness the partisan debates and resulting state legislation about stem cell research or health care reform to appreciate these realities. On the other hand, if science stays relatively nonpartisan, compromise and pragmatic policy development is possible. As with economic or genetic counselor policies, the questions center more on ‘‘what works’’ than ‘‘what is right’’ to advance state policy goals.

### 2NC – Links

#### Americans are skeptical of cognitive biotech – uncertainty.

Funk 3-17 [Cary; director of science and society research at Pew Research Center, where she leads the Center’s efforts to understand the implications of science for society; 3-17-2022; "5 key themes in Americans’ views about AI and human enhancement"; Pew Research Center; https://www.pewresearch.org/fact-tank/2022/03/17/5-key-themes-in-americans-views-about-ai-and-human-enhancement/; Accessed 7-1-2022; RL]

1 Americans’ judgments about the potential impact of this set of applications are varied and, for portions of the public, marked by uncertainty. Far more Americans anticipate positive than negative effects from the widespread use of facial recognition technology by police to monitor crowds and look for people who may have committed a crime: 46% think this would be a good idea for society, while 27% think this would be a bad idea and another 27% are unsure. By narrower margins, more describe the use of computer algorithms by social media companies to find false information on their sites as a good rather than a bad idea for society (38% to 31%).



A bar chart showing that a majority says brain chip implants for improved cognitive abilities would be bad idea for society; public more open to other applications of human enhancement and AI

By contrast, the public is far more hesitant about a future with widespread use of computer chip implants in the brain to allow people to far more quickly and accurately process information: 56% say this would be a bad idea for society, while just 13% think this would be a good idea. And more see the prospect of widespread use of driverless cars in the future as a bad (44%) rather than good idea (26%) for society. Still, roughly three-in-ten or more Americans are uncertain about the societal impact from each of these six developments.

Less than half of the public believes these technologies would improve things over the way they are now. One of the factors tied to Americans’ largely cautious take on these new and emerging developments stems from doubt that these potential human enhancements would make life better than it is now or that reliance on AI would improve on human judgment or performance. On these questions, less than half of the public is convinced improvements would result. For example, 32% of Americans think that robotic exoskeletons with built-in AI systems to increase strength for manual labor would generally lead to improved working conditions, while 36% think their use would not make much difference and 31% say they would make working conditions worse.

#### A majority of Americans have extreme concerns about gene editing and brain implants.

Pew Research ’16 [Pew Research Center Science & Society; a nonpartisan American think tank based in Washington, D.C. It provides information on social issues, public opinion, and demographic trends shaping the United States and the world; 7-26-2016; "Human Enhancement"; Pew Research; https://www.pewresearch.org/science/2016/07/26/human-enhancement-the-scientific-and-ethical-dimensions-of-striving-for-perfection/; Accessed 7-1-2022; RL]

Given that the science is still at a somewhat early stage, there has been little public discussion about the possible impacts of human enhancement on a practical level. But a new survey by Pew Research Center suggests wariness in the U.S. public about these emerging technologies. For example, 68% of Americans say they would be “very” or “somewhat” worried about using gene editing on healthy babies to reduce the infants’ risk of serious diseases or medical conditions. And a majority of U.S. adults (66%) say they would “definitely” or “probably” not want to get a brain chip implant to improve their ability to process information.

# Kritiks

## K – General

### 1NC – BCIs Links

#### BCI technology calls into question the ethical aspects of the technology–means we face issues of human autonomy

Lee & Jang 13 (Kyeong-Yeon Lee (College of Liberal Studies, Seoul National University, Gwanak-gu, Seoul 151-742, Korea), Dayk Jang (College of Liberal Studies, Seoul National University, Gwanak-gu, Seoul 151-742, Korea) "Ethical and social issues behind brain-computer interface," 2013 International Winter Workshop on Brain-Computer Interface (BCI), 2013, pp. 72-75, doi: 10.1109/IWW-BCI.2013.6506635.)

Ethical and Social Issues Future BCI applications that provide users with physical and cognitive rehabilitation and enhancement inevitably raise ethical and social issues. It is expected to set off public debates on what is acceptable and what should be restricted. These controversies will also affect the public acceptance of BCI technology in our society [12]. Privacy In a BCI system, it is performed to record brain activities and to process the measured signal before translating to the predefined control commands. That is, it acquires neuronal data acquired through either an invasive or a non-invasive manner. For a high accuracy, the interface often uses information that is personalized to fit the subject's individual characteristics. There is no doubt that these data must be encrypted to protect the privacy of a BCI user [9]. This issue runs parallel to the neuroethical debates surrounding neuroimaging and mind reading. Liability The issue of liability, one of the typical issues in neuroethics, especially in drug research, also occurs in BCI research. Signal acquisition and processing steps are important in BCI since they allow to extract meaningful features from the subject's brain data and to interpret them by machine learning techniques. However, even after the machine has been trained to classify signals from the brain, there is always the possibility of misinterpretation. When an error occurs in the analysis process, the BCI will produce a command that is not intended by the user. In such cases where a discrepancy occurs between the user's intentions and the generated commands, we face the issue of liability [11]. If a BCI robot “accidently” breaks something or harms another being, “who” or “what” should take the responsibility for the damage? How can we determine whether the actual intention of the user was malignant or not? Personal Identity BCI installment may trigger changes in the cognitive and perceptive abilities of a subject. The effects of BCI on an individual's personhood may lead to the debate whether the alteration in oneself can also be accepted as the same personal identity [10]. Especially when the technology is expected to improve the user's ability to move and communicate in any way despite potential risks and side effects, BCI suggests a similar controversial issue in neuroethics regarding the enhancement of human abilities through medical measures such as drugs or BCI. Fairness Research on BCI is still in its early stages and for now limited to therapeutic or rehabilitative devices such as robot arms and wheelchairs. However, neuroscientists prospect the spread of BCI into applications for the general public as well and in the future BCI could be used to enhance the physical abilities. In this case we can predict the issue of fairness. Can we call a competition between an “enhanced” BCI user with and an ordinary person fair? It would become an important matter of deciding how far this enhancement can be allowed in the perspective of impartiality and justice. Team Responsibility Because interdisciplinary BCI research requires experts from many fields from neuroscientists, psychologists, engineers, surgeons, and computer scientists, it is important that there must be a rigid protocol on team responsibility among researchers. Work should be distributed reasonably and fairly, and the credits should follow as well [8]. Responsibility and liability for any decision made for the patient and the research must remain clear within the team. Team responsibility is required especially for a group of researchers who come from different areas to cooperate and draw successful outcomes. Access to Technology Access to information on a piece of technology, in this case BCI, should be distributed fairly upon the general public. This is also a consensus in the medical field as well [17]. It may be quite challenging to achieve a completely equal distribution of the BCI technology. Nevertheless, scientists and researchers must strive to educate and inform the society about the results of basic or clinical researches through appropriate publication of articles in public. SECTION IV.Discussions: Ethical Principles It can be controversial among BCI researchers whether a potential effect of a BCI technology is ethical or not. However, there are certain fundamental principles that need to be applied during the decision-making process in order to prevent such ethical or social issues. Three core values that have been applied in the medical field still remain valid in this developing field of BCI. Respect for Autonomy BCI applications must respect the autonomy of the subject. Patients must have a complete understanding about any medical or technical procedures taken on them including the purpose, procedures, and expected benefits, and potential risks [8]. In case of locked-in syndrome (LIS) patients who lack any voluntary motor control except eye movement including blinking, communicating with the patient and acquiring a complete informed consent may be more challenging [18]. Nevertheless, they must be given the rights to participate in decision-making which implies that for each and every intervention proposed by the research team there must be reasonable alternatives. Beneficence Before installing any device directly or indirectly to the human nervous system, the beneficence of the technology must be carefully reviewed. BCI technology that aims to aid paralyzed patients will certainly have its benefits. However, the research team must not only focus on the positive aspects of the application but also weigh out the risks and side effects fairly and accurately as well [17]. For example, BCI connected to the motor areas of the human brain may enable the subject to move more freely through the device and at the same time limit other aspects of communication and movement. It is an important issue to decide whether the benefits of the intervention outweigh the negative effects. Non-Maleficence BCI devices and researches should be ethical with respect to individual users and the surrounding social environments. It is essential to investigate and monitor the social impacts of BCIs extensively. Just like any other medical procedures, the research should not cause any harm or danger to other human beings around the user [17]. This evaluation should not only be limited to the current generation, but also keep a keen eye on the potential effects on the next generation. SECTION V.Conclusion and Further Research BCI technologies have the potential to affect many aspects of everyday life. In this paper, we introduced state-of-the-art BCI technologies and applications available to both patients who have limited motor abilities and the normal subjects. Although the BCI technology is promising in terms of enhancing the human performances, we need to consider its potential side effects to individuals and the whole society. There are many ethical concerns that need to be taken care of in the process of researching and installing the interface upon a human subject. The privacy of the individual, especially the data acquired from the human brain, must be carefully encrypted and protected. Regarding to the teamwork, the workload and the credits should be distributed fairly and appropriately including the responsibility from each and every decision made. In addition to this, there is a rising concern about the potential effects, which BCI installation can lead to, in terms of an individual's cognition, perception abilities, and personality. BCI researchers and users have not yet established a shared protocol for BCI use. Ethical dilemmas and concerns must be adequately addressed publicly with the cooperation of from various experts such as neuroscientists and engineers to non-experts including potential BCI users and their families. With the appropriate assessment and regulations, ethical issues rising from BCI research and application procedure will be able to come to an optimistic conclusion.

### 1NC – Super Soldiers/Overmatch Links

#### Super soldiers create an ethical dilemma where surgeons take risks on untested operations

Galliot & Lotz 16 (Galliott, Jai, and Lotz, Mianna. Super Soldiers : The Ethical, Legal and Social Implications. Routledge, 2016. pg. 126-135)

Surgical innovation is largely motivated by the desire to improve upon existing surgical interventions. Improvements can occur across various dimensions of surgery. Common targets of surgical innovation include: decreasing the duration of surgery; using less invasive techniques; shortening hospital stays; improving patient outcomes; or curing the previously incurable. As the examples discussed in the previous section suggest, the targets of surgical innovation have changed as medical science has developed: Larrey’s amputation protocol was aimed at controlling life-threatening infection, whereas the advent of antibiotics has rendered the surgical control of infection less urgent. However, the primary ethical motivation for surgical innovation has not changed. Beneficence – that is, better surgical experiences and outcomes for individual patients – has always been the common primary goal of innovating surgeons. Of course, there are also other potential or actual motives such as the surgeon’s desire to pioneer new techniques and to be recognised as a leader in the field; the desire (individual or corporate) to develop a financially rewarding innovation; and the need to find new efficiencies in the use of healthcare resources. At times such motives can lead to conflicts of interest, as we discuss below. In the context of military surgical innovation, an additional consideration arises. This relates to the patient qua soldier, and the need of the military for soldiers who are as fit as possible or who can return to active service as rapidly as possible following injury. Thus, as well as the recognised ethical issues arising from civilian surgical innovation (Johnson and Rogers 2012), military surgical innovation introduces the ethical complexity of interventions performed on patients in order to benefit not only themselves, but also the military those patients serve: there is an imperative to combine good medicine with good tactics (Blackbourne et al. 2012, p. S389). Our discussion here focuses on issues of Ethical Considerations in Military Surgical Innovation 127 harms to patients/soldiers, informed consent for surgical innovation in the military context, and conflicts of interest associated with military surgical innovation. Before turning to specific ethical issues, it is worth considering whether or not there is a duty to innovate in surgery, and if so, how the military context might affect this. Unlike at least some branches of medicine, surgeons are both diagnosticians and intimately associated with the quality of the intervention that they deliver; they are part of the therapeutic modality and as such, personally responsible for the quality of the surgery they perform. Whether or not the patient does well is dependent to a significant degree upon the skills of the individual surgeon. This feature is evident in the historical accounts of military surgical innovation discussed in the previous section: Larrey and Gillies were not only innovators in terms of changing care protocols and extending the treatment options available, they were also regarded as extremely talented surgeons (Williams 1843; Bamji 2006). This feature of surgery, that surgeons themselves are an inherent part of the therapy, creates an obligation for surgeons constantly to strive to improve their techniques, through research, innovation and repetition. But this can be ethically challenging for the following reasons. First, the outcomes of surgical innovations cannot always be predicted in advance, making it difficult for surgeons to be confident that they are acting in the best interests of their patients when they innovate. Second, adopting new techniques entails a learning curve during which the first cohort of patients exposed to the new technique will be disadvantaged compared with patients treated when the surgeon is more practiced. Third, as the boundaries between innovation and research are not well demarcated, this can lead to role confusion for the surgeon who is both researcher and practitioner (Rogers and Johnson 2013). In the military context, the pressures to innovate may be magnified. Combat in war may provide the only source of particular types of injuries and wounds, and thus the only opportunity to develop new treatments. As mentioned above, the use of IEDs in Afghanistan and Iraq has led to new types of injuries with specific characteristics including limb amputations and extensive abdominal and genitourinary soft tissue injuries contaminated with dirt and other debris (Blackbourne et al. 2012). Given the unique characteristics of these injuries, any innovations in managing soldiers wounded by IEDs has to occur in the care of those patients; it is not possible to generate the relevant knowledge from another patient cohort as there is no comparable civilian weapon or pattern of injuries. Thus in situations of military conflict that generate unique injuries, the duty to innovate falls heavily upon military surgeons, as it is only in this context that relevant innovation can occur. We now turn to specific ethical issues arising through surgical innovation. Patient Harms and Benefits Innovations in surgery have the potential to benefit patients, but equally, innovations may lead to patient harm. Patients may have increased morbidity and mortality following innovative procedures, despite the beneficent intent of the 128 Super Soldiers innovation. The history of surgical innovation is replete with examples of wellintentioned innovations that left patients either no better or worse off than if they had received the standard procedure. Examples include ligation of the internal mammary artery for angina which was eventually found to be no better than placebo (Beecher 1961), freezing of the stomach lining as a treatment for gastric ulcers (Frader and Caniano 1998) and insertion of the DePuy articular surface replacement hip prosthesis, which had high rates of failure and other complications (Cohen 2012). The underlying challenge regarding innovation is that the effects of the innovation are unknown at the time that it is performed. Thus it is impossible to predict whether or not the innovation will be better than the existing alternative, or whether patients will be harmed. For innovations that occur in emergency life-threatening situations, trying something new can be justified as there may be no alternative. In these situations, even if the innovation is unsuccessful, the patient is no worse off than they would have been absent the innovation. Here the harm to the patient is not the direct result of the innovation; rather the innovation failed to ameliorate a life-threatening emergency. Planned innovations bear a different burden of responsibility, in that with a planned innovation, there is time to consider and anticipate potential harms, even though these may not always be accurately predicted. However, it is not possible to identify in advance unanticipated harms, thus even with the best planned innovation there will always be the risk of harm. Where the innovation is performed to enhance rather than to address an existing health problem, the responsibility becomes correspondingly higher: surgical enhancement involves a healthy patient (in the case of soldiers, usually an extremely fit person) subjected to a surgical intervention that is not therapeutically indicated. Such intervention entails at least some morbidity (pain, scarring, exposure to anaesthesia, anatomical modification), not all of which is reversible. Thus the provision of innovative surgical enhancements requires critical and independent assessment of the potential for harms, the justifications for the enhancement and the likely effects (physical, psychological) on the recipient. Indeed, it is unclear whether surgical innovation that aims at enhancement can be thought of as motivated by beneficence, which we identified as the primary goal of past and present surgical innovation. As well as unavoidable harms from the procedure itself, innovative surgery can be harmful to patients during its development phase due to the learning curve. When surgeons take up a new procedure, they are more likely to encounter complications and take longer, than once they have fully mastered the new technique. Thus even innovations that prove in time to be safer and more effective than their predecessors can lead to harm for patients treated in the early phases of the introduction of the innovation. Laparoscopic cholecystectomy provides a clear example of this; when the procedure was first introduced there were high rates of bile duct damage compared to the open procedure (Moore, Bennett and Meyers 1995). Once established, however, laparoscopic cholecystectomy rapidly achieved better outcomes for patients than the open procedure. Estimates of the Ethical Considerations in Military Surgical Innovation 129 number of cases needed to perfect surgical techniques vary, but may be as high as 200 (Voitk, Tsao and Ignatius 2001). The learning curve presents an additional ethical challenge when the group of patients who undergo surgery during the learning curve differs demographically from groups who will later benefit from the surgery. The development of facial reconstructive surgery presents just such a case, as contemporary recipients of cosmetic plastic surgery, that is, healthy individuals whose aim is to improve their appearance, benefit from techniques developed on wounded soldiers. It is not obvious how to address this ethical challenge. There does not seem to be anything inappropriate about the early facial reconstructive surgery performed on the soldiers, undertaken in the interests of securing the best possible functional and aesthetic outcomes for those patients. Nor do current cosmetic procedures harm or disrespect past soldiers in any meaningful sense. Given the high number of operations performed in times of war, perhaps the first step is to recognise that soldiers have been and will continue to be over-represented in the learning curves for some surgical procedures, particularly procedures that aim to repair or reconstruct wounded bone and tissue. It is important to ensure that the lessons learned on soldiers – both those with civilian application and those unique to conflict injuries – stay learned, to minimise the unnecessary suffering of future soldiers. Military history is full of innovations that were forgotten and had to be relearned in the next war, including Larrey’s innovations in triage, transport and en-route care, which were ignored by the British during the Crimean War (Manring et al. 2009). In terms of recognising the over-representation of soldiers in surgical learning curves for some widely used civilian procedures such as cosmetic surgery, most countries have social practices for recognising the sacrifices of soldiers, as well as social structures to support returned soldiers, and these might be the most appropriate forums for recognising this particular contribution. The deleterious impact of the learning curve upon surgical outcomes also leads to challenges in knowing when to evaluate innovations and when to abandon them as harmful or ineffective. If no allowance is made for the learning curve, we risk abandoning procedures that may turn out to be beneficial once surgeons have perfected their techniques, but on the other hand, undue allowance for initial poor outcomes may lead to harmful innovations remaining in practice for prolonged periods. This challenge applies equally in military and civilian circumstances. One proposed solution to this is a system of data collection and evaluation starting when the innovation is first implemented (McCulloch et al. 2013). This approach is being used with some success in the US military context to evaluate a new system of managing combat casualties known as the Joint Trauma System (JTS). The JTS is described as ‘a novel systematic and integrated approach to organize and coordinate combat casualty care’ (Blackbourne et al. 2012, pS388). A Joint Theater Trauma Registry (JTTR), commenced in 2005, supports the JTS. The JTTR records a variety of data providing vital information to drive improvements in clinical care, as well as generate new knowledge (Blackbourne et al. 2012). Blackbourne et al. note that although the JTTR was not set up as a research data 130 Super Soldiers tool, knowledge generated from the registry about the JTS has revolutionised field trauma care and fostered advances in military medicine. The JTTR provides an excellent model for maximising knowledge about the introduction of an innovation. The highly regulated context of the military has enabled the development of a comprehensive registry tracking the outcomes of the new trauma management system, thus maximising benefits and leading to the earliest possible identification of harms.2 Informed Consent Informed consent refers to the permission given by a patient for a medical or surgical intervention. Healthcare interventions are ethically justifiable only if the patient concerned is competent to make a decision; has been provided with, and fully understands relevant information about the procedure; and is making the decision freely and voluntarily. Military surgical innovation poses a number of challenges to informed consent. First, patients may not be competent to give consent for innovations provided as part of the management of trauma, as they may be unconscious, in pain or under the influence of analgesic drugs. In these situations, consent is not possible; the surgical innovation must be ethically justified on the grounds that it is in the patient’s interests. The prospective collection of data on military surgical interventions, particularly innovative interventions, as recommended in the above section, can act as a further safeguard of the interests of soldiers receiving unplanned innovative care. In contrast, patients are usually competent to consent to planned innovations, such as procedures to implant rehabilitative or enhancing prostheses. However, there are other threats to informed consent in these situations, relating to the provision and understanding of information, and the voluntariness of the decision. As detailed above, by their very nature, there are unknown risks associated with surgical innovations. Even where innovations are meticulously planned in advance, it is impossible to eliminate the ‘unknown unknowns’ – unanticipated adverse outcomes. This feature leads to a moral obligation to consider whether or not innovative surgery is a type of research, and should therefore use the standards of research consent rather than those of routine clinical care (Lotz 2013). The standards for consent to research are more demanding than those of clinical practice, in part to ensure that participants understand that the research is aimed at generating knowledge about the intervention, and that, in advance of that process, it is not possible to provide a full account of the likely harms and benefits.

#### Biologically enhanced soldiers are unethically designed to kill–makes us forget that war should always be avoided

Galliot & Lotz 16 (Galliott, Jai, and Lotz, Mianna. Super Soldiers : The Ethical, Legal and Social Implications. Routledge, 2016. pg. 53-61)

In the first instance, any discussion of biogenetically enhanced soldiers should be a powerful wake-up call. That we might need to change anything substantial about human beings so that they can be (more) effective in their militarist roles is deeply unsettling. It implies that war is becoming so complicated, rapid, and foggy that human soldiers in their unaltered state cannot adequately keep up with its pace and demands. Perhaps this has always been true, although the situation seems exacerbated in the context of contemporary warfare, accompanied by everevolving technological capabilities. Military necessity demands that, in order for militaries and individual soldiers to keep up – in order for them to have a legitimate chance at protecting themselves and the citizens they represent, and overcoming their adversaries – they need to design technologies and themselves to be better than their opponents. In contexts where opponents are less advanced in this regard, this imperative will be less pronounced. Yet, while the continued development of military technologies is a centuries-old endeavour, and it has long been recognised that military forces with ‘the strongest’ and ‘the best’ soldiers and technologies are more likely to be victorious, new developments in robotics, nanotechnology and biotechnology mean that these technologies are becoming more sophisticated, rapidly evolving and intrusive.1 Even in the face of heated debate on the ethics of human enhancement (in both military and civilian contexts), some such enhancements are already available, and, if things keep going as they are, more are likely to emerge in the future. Even if we assume that there is nothing inherently morally unacceptable about (safe) human enhancements, the morality of specific modes of enhancement depends on the context in which they are used, and the end(s) that they are being used to achieve. For example, while there may be nothing inherently morally unacceptable about enhancing humans to be more patient through pharmaceutical means (say), enhancing individuals to be more patient so that they could be more effective 1 We might speculate that eventually there will be no significant role for humans to play in warfare, at least not anywhere near the front lines, in which case warfare might become futile, absurd (Krishnan 2009). 54 Super Soldiers torturers would seem to be morally problematic. This is because torture itself is morally unacceptable, and deliberate contributions to promoting human torture are by extension morally unacceptable as well.2 Enhancing the patience of snipers may be less problematic, and enhancing the patience of soldiers so that they are less likely to make hasty decisions when engaging with enemy combatants (and thus less likely to fail to discriminate between legitimate combatants and innocent civilians) is likely to be less unacceptable still. Or, ‘enhancing’ soldiers to exhibit a lack of empathy for the plight of other human beings (even if only in their enemies) would promote a lack of discrimination, potentially loos.en concerns for proportionality and promote immoral behaviour. This is true even if having less empathy for one’s opponent (whether one is a sniper, torturer or whatever) could promote military proficiency. While warfare in general is ugly, an enterprise that routinely sparks the most despicable of human behaviour, it is also taken to be necessary, especially given that threats of attack and violence from the outside are pervasive. The ethical issues that emerge at the intersection of human enhancement and warfare are tricky to grapple with in part because of the blurriness of the moral acceptability of the ends of warfare taken more generally: on one hand, it is largely assumed that defending oneself (either as an individual or as a nation) is morally acceptable, and thus that (at least) some military action is permissible, or at worse a necessary evil in an imperfect world, where our wellbeing and way of life is constantly vulnerable to outside threat. On the other hand, it is also largely agreed that killing others is wrong (for reasons other than defence), and that the colossal harms that come about as a result of warfare are undesirable, and thus that war is something that, in the long term, we ought to work to mitigate and eliminate altogether. (To say that war is ‘inevitable’ is to misuse language, however unlikely it seems that putting an end to war once and for all is an achievable goal, given the current state of the world.) As long as military actions conform close enough to the former justification, they are taken to be morally justifiable. Something has gone awry, however, if we lose sight of the latter goal altogether, that is, if we ignore the idea that war should not occur at all.

## K – Ableism

### 1NC – Ableism K

#### The aff is a project of techno-ableist eugenics that attempts to re-constitute living beings in the name of ‘progression’. The aff’s rhetoric silences disabled cyborgs in favor of a techno-utopian future – they are literally testing BCIs on disabled people in the real world right now in a continuous project of animalization with the explicit goal of “ending physical disability” and “curing mental illness” to purify the future from “undesirables” – reject the team

**Rasper 2/18** (Romy Rasper, Sociology, B.A. in 2016 at Eberhard-Karls-University Tübingen. Science and Technology (STS), M.A. in 2020 at MCTS. Focusing on Crip Technoscience, NeuroTech, Intersectionality and Kyriarchy, New Materialism. NanoEthics, "Prototyping Criptical Neural Engineering — Tentatively Cripping Neural Engineering’s Cultural Practices for Cyborg Survival and Flourishing", 2/18/2022, https://link-springer-com.proxy.lib.umich.edu/article/10.1007/s11569-021-00405-8, accessed on 6/29/2022)//gideon

This Discussion Note calls for attention to the cultural practices of Neural Engineering as part of the life sciences as practices and technologies of manufacturing life. Through focusing on Disability, Ableism, and especially Technoableism within the field, I point out instances of onto-epistemological violence, which influence the likelihood of survival of disabled people individually and as a (cultural and political) group. By drawing on Crip Technoscience, a method assemblage is introduced that allows to address these issues in an intersectional-kyriarchal understanding of interlocking systems of privilege and oppression through generative critique and productive collaborative work. Criptical Neural Engineering is dedicated to disability justice and disability gain. It centers disabled people as epistemic activists and demands response-ability and accountability from non-disabled people, specifically engineers that want to build adaptive technologies with disabled people.

When I first saw the call for a NanoEthics special section on how life sciences and technologies (re-)constitute living beings and the possible substantial transformation of their corporeality through the expected convergence of “nano-, bio-, information and cognitive sciences and technologies (NBIC)” [1], I immediately thought about how this also raises the question of whose life gets (not) manufactured, and with that it also becomes relevant to inquire by whom as well as the what and the why.

This perspective is as much informed by my lived experience as by my research work. I am, among other things, a white neurodivergent, disabled scholar of Science and Technology Studies (STS). In 2014, I started to investigate the intersection of technology and disability by interrogating my desire to “overcome” my congenital disability through voluntary amputation of my left arm to replace it with a mechanized, technological arm — a prosthesis. At the time, I thought that I could become a vanguard of the human evolution by technological means — a dedicated transhumanist view that overlaps with a specific presentation of technological perfectibility ([2], Pos. 181Footnote 1). Through the encouragement and support of my professors in sociology of technology, I was able to position this desire within the human enhancement discourse and larger ableist narratives around the idealized corporeal standard. Since then, this intersection has been my primary research interest, and my understanding has expanded as I learned about and get sensitized to the intersectional-kyriarchal intricacies of the “interlocking systems of privilege and oppression.”Footnote 2

In my Master’s Degree program, the focus shifted from enhancement narratives to the design processes of technologies for, but seldom with, disabled people.Footnote 3 Several events contributed to this shift: first, a semester-long ethnographic study in an introduction course for neurotechnology and the portrayal of disability in it; second, a more than year-long internship as a research assistant for the project “FUTUREBODY — The Future of the Body in the Light of Neurotechnology” [7]; third, an ongoing collaboration with neuroengineers, primarily via Nicholas Berberich, a Ph.D. student at the TUM Institute for Cognitive Systems (ICS) that started mid-2019 and encompasses, among other things, supporting the CereBro Team of the Cybertum ProjectFootnote 4 by providing a Crip Technoscience perspective in the development.

All of this culminated in my master’s thesis, “Disability in Neuroengineering” which interrogated how disability and the disabled body is figured in Neuroengineering and how to critique Neuroengineering and its culture constructively to produce better and more just (neuro)technologies through co-design and human-centered approaches.

This discussion note is a continuation of this effort by being an intra-ventionFootnote 5: A call to action for “Studies Investigating Science and Technology”Footnote 6 to give attention and inquire about the (cultural) practices of Neural Engineering. If my research has not overlooked something (see Appendix Table 1), Neural Engineering seems to be currently systematically neglected by STS, as well as (Critical) Disability Studies (DS), including feminist strands.

This discussion note brings attention to Neural Engineering as a site of research and collaboration, broadening its focus, practices, and possibilities by pointing out entrenched ableist structures and providing a tentative approach to support the goal of “building assistive technologies … to enable disabled people to lead an active and self-determined life” ([10], p. 21) through fostering a cultural shift in development and participation in Disability Justice.

Neural Engineering, as a field, is concerned with the application of “engineering principles and neuroscience methods to analyze neurological functions and to design treatments for neurological limitations and dysfunctions” ([11], p. 286). It “encompasses experimental, computational, theoretical, clinical, and applied aspects of research areas at the molecular, cellular, and systems levels” [12]. The description of an introductory course for Neural Engineering states that the discipline “combines foundations of biology, physics, mathematics, computer science, psychology and engineering to design artificial ‘neural systems,’ such as active body prostheses, or autonomous robots, whose design and functional principles are based on those of biological nervous systems” [13]. According to Nicholas Berberich, the discipline brings together neuroscience and engineering through “reciprocal synergetic application of both fields’ methods and bodies of knowledge to each other” ([10], p. 7).

Neural Engineering is adjacent to Neuroscience, but it would be too simplistic to understand it as a sub-discipline of either Neuroscience or Engineering. The range of impact reaches far into other fields. The fields probably most relevant here are Artificial Intelligence, Deep Learning, and Machine Learning, including Artificial Neural Networks (ANNs). The manufacturers of algorithms for governmental and commercial use face sustained critique for the reproduction and entrenchment of racist, sexist (and other) discrimination [14,15,16], which extends to the ways in how ethics is (not) integrated and (not) discussed in these fields [17,18,19].

But it seems that inquiries into the field of Neural Engineering itself with its cultural practices, norms, values, and procedures have been limited. This possible neglect is concerning as these have far-reaching consequences in the application of “engineering principles and neuroscience methods” ([11], p. 286) to the (human) nervous system — “often with the goal of providing rehabilitative solutions” ([11], p. 286). It directly links ideas of dysfunction and proper functions to notions of disability and neurodiversity [20].

With that, ableism becomes a necessary focus. Fiona Kumari Campbell defines ableism as a “network of beliefs, processes and practices that produces a particular kind of self and body (the corporeal standard) that is projected as the perfect, species-typical and therefore essential and fully human. Disability then is cast as a diminished state of being human.” ([21], p. 5).

What is (not) deemed pathological and in need of intervention has a direct impact on our self-understanding as humans including who lives and who dies. This, in turn, affects “future-making,” as John Urry calls the process of imagination and foretelling, which is often relegated to “specialists of the future” ([22], p. 17). Currently, disabled people “are continually being written out of the future, rendered as the sign of the future no one wants” ([23], p. 46). Because of that, we need accessible and inhabitable futures where disabled people are present, and therefore, we have to look whose lives get manufactured, by whom, and why.

As a leading producer of Neurotechnologies, which have “taken centre stage in many visions of a technologized future body,” Neural Engineering is at the frontier of the merger of the bodymindFootnote 7 and technology and these processes [7]. Questions of what differences of being are recognized, validated, and valued become unavoidable ([20], p. 39), which creates an inseparable connection between Neuro-Engineering and Disability. It is thus crucial to “engage with” Neural Engineering, “to inquire into the effects and assumptions of emerging technologies” ([23], p.124).

One of the most prominent depictions of the merger of the bodymind and technology are cyborgs as “human-nonhuman entanglement” [1]. It is present in a variety of media that in turn inspires technology development. This reciprocal influence of media and technology development is, for example, explored by Kirby [25]. The cybernetic organism, “cyborg”, was originally envisioned by Clynes and Kline in the 1960s for NASA as the technologically altered human body necessary “to meet the requirements of extraterrestrial environments” and make space travel possible. Their conceptualization is strongly influenced by their work in psychiatry, within which Kline pioneered the development of antipsychotic and antidepressant medication. These influences become most notable through their argument to include remote involuntary medication if deemed necessary because of psychoses ([26], p.76). This position, as feminist disability studies scholar Alison Kafer states, highlights “the cyborg’s history in institutionalization and abuse” and connects it from the beginning to disability on multiple levels ([23], p. 126ff).

This article follows The Cyborg Jillian Weise’s understanding of cyborgs as, like Ashley Shew put it, “technologized disabled people” ([27], p. 1f). This definition overlaps with the term (and concept) “cripborg” — a “disabled cyborg” by Nelson et al. ([28], p. 2). But using cyborg this way (along with cripborg) is a deliberate decision in order to reclaim and critique “the cyborg” from its de-contextualized and de-materialized metaphorization, which neglects its entanglement with disability politics, mainly proliferated through Donna Haraway’s Cyborg Manifesto ([23, 29], [30], p. 114). As Kafer points out, Haraway uses the (fictional) disabled character, which is described as “severely handicapped” to evoke the “stereotyped assumption” of “‘total dependence’ in order to convince her readers of the existence of bodies that don’t ‘end at the skin or include at best other beings encapsulated by skin’” and “presents disability as the site of spectacular technological fixing” ([23], p. 112). This presentation is one of the few but significant commonalities the cyborg figure of Haraway and cyborgs of (science fiction) media and news coverage share.

I align myself with Weise, Shew, Stephens, and Kafer to firmly ground the cyborg in disabled lived experiences, highlighting historical lineages to its above-mentioned origins while retaining connections to the political figure in its multiplicity and infuse cyborg theories with crip politics to further complicate the human-technology connections in conjunction with disability as political category ([23], p. 116, 118). As Ashley Shew writes:

When disabled people declare cyborg expertise, this is a political claim, because cyborg voices have for so long been ignored and dismissed. Too few disabled people have been consulted about our cyborg-ness, our technological choices, or the planning and design (usually done by non-disabled people) that shapes our lives. ([27], p. 13)

The neglect of disability as valid and valuable position is also present in the practices of life sciences and technologies that manufacture life. Disabled people often appear just as objects that are granted a precarious status of personhood. Research is most often about us, sometimes for us, and seldom with us. We frequently wear the burden of being wounded now for the betterment of others in an uncertain future. Lochlann Jain pointed out in The Prosthetic Imagination that “it usually is not the same body that is simultaneously extended and wounded” and adds that it should not be forgotten that the wounding includes the psyche ([31], pp. 35, 37). This link between disabled people and cyborg technologies (that is also prominent in news storiesFootnote 8) stages us as “privileged subjects in a teleology of technical augmentation, which is understood as evolution by other means” and thus as a new category of human-in-the-becoming: the superhuman, while “‘ordinary’ people will have to wait” ([2], Pos. 181 own translationFootnote 9; [23], p. 107).

But with that, non-disabled people do not bear the risks of early-stage development testing that includes malfunction and abandoning of hard- and software regularly. Instead of witnessing the “non-innocent” ([33], p. 597) materialization of such technologies, they can have naïve transhumanist dreams about overcoming their (presumed) biological limitations. Just as promised in countless science fiction stories and hype news coverage, they might become cyborgs one day with a shiny, slender, “sexy” artificial arm full of multi-functional tools and transformations. These are most often the dreams of “tryborgs” — as Jillian Weise calls them — “a non-disabled person who has no fundamental interface. The tryborg is a counterfeit cyborg. The tryborg tries to integrate with technology through the latest product or innovation” [34]. Moreover, cyFootnote 10 points out that.

[t]he cyborg is the engineer’s dream. The engineer steers and manipulates the human to greater performance. As a common cyborg, I subvert that dream. I do not want to sell any of their shit for them. I am not impressed with their tech, which they call 3C98-3, and which I am wearing, a leg that whirs and clicks, a socket that will not fit unless I stay in the weight range of 100-105 pounds. I am 88 per cent charged in basic mode and I have taken 638,402 steps on this leg. The last one they gave me was a lemon. Maybe this feeling of trial-and-error, repetition and glitch, is part of the cyborg condition and, by extension, the disabled condition [30].

It is important to understand that cyborg technologies are much more mundane and have much less prestige than science fiction or even news coverage makes us believe. Cyborg technologies are adaptive technologiesFootnote 11: often rugged, clunky, expensive, requiring maintenance, seldom convenient, and sometimes risky to wear. They stress scar tissue and often leave an opening where flesh, bones, and the artifact connect — interface — with each other ([28], p.13). The linkage between technological artifacts and bodyminds is vital to consider. These interfaces are very often inter- and multispecies (including artificial) “contact zones” ([36], pp. 216, 218) with the potentially deadly outcome if the delicate homeostasis of live-saving and death-bringing entities (including medicaments) is not held. These possible imbalances include “malfunctions,” where the cardiac pacemaker, the insulin pump, or the electric knee stops working. This is the rough, often violent, non-innocent reality of common – of disabled – cyborgs. But because disability is posed to be self-evidently a signifier for an “undesired future,” “a future no one wants,” how much society got “rid” of it through technology is an indicator of progress. Cripborgs or cyborgs are part of neither the present nor any future story ([23], pp. 3, 20, 27; [30, 34]).

With this perspective, it seems just rational that we “disabled, impaired, (chronic) ill, mad, D/deaf, neurodiverse (among other crip ways of being) people” and especially cripborgs, do not need to be considered and recognized in the “future-making” ([6], p. 4; [22], p. 17). This includes the production of technology (with Adaptive Technology), besides the continuous contributions of us not only as end-users but, as Liz Jackson put it, the “Original Lifehackers” [37]. We become either never born (because of reproductive technologiesFootnote 12) or “cured” and normalized. Eugenics is still alive and thriving. In its shadow lurks “euthanasia”. It is horrifying and frightening to live in a world that wants you, the not-so-abstract you, as an inhabitant of the category disability (which intersects with others that increase or decrease the vulnerability or protection), to be eradicated ([23], p.46). This has to change.

This is why the Disability Studies and Crip Technoscience perspectives are of crucial relevance to critically engage with boundary-blurring and images of the merger of body and technology. This relevance extends to the interrogation of the practices and the impact of manufactured life. Often, cyborg technologies become an “evocative shorthand for adaptive technology, associating such technology with a promising future for ‘the disabled.’” But this “promising future” has a major downside, as Alison Kafer points out:

In our disabled state, we are not part of the dominant narratives of progress, but once rehabilitated, normalized, and hopefully cured, we play a starring role: the sign of progress, the proof of development, the triumph over the mind or body ([23], p. 28).

“Supercrip”Footnote 13 stories spread this kind of narrative ([23], p. 141). They are so pervasive, which even disabled people themselves can find them alluring, especially because they provide a semblance of agency. I myself have believed in them, as briefly mentioned in the introduction. Thus, it is not surprising that supercrip stories and narratives of “promising future” can be found within the discipline of Neural Engineering. Moreover, they get even more credibility when told by a disabled person, as one of the most prominent representatives of the field, Hugh Herr, exemplifies, which illustrates the pervasiveness of ableism.

Herr is not only professor at the MIT Media Labs, but also the director of its Biomechatronics Group, whose tag line is “Towards the end of disability” [39] and associated editor of the Journal of NeuroEngineering and Rehabilitation [40]. In a TED talk, Hugh Herr says that he is, besides having highly sophisticated Bionic Legs, “not yet a cyborg” due to the lack of Neurofeedback: “If I were a cyborg, I could feel my legs, they would become part of me, part of self” ([41], 2m12s-2m17sFootnote 14). A bit later, he states:

By designing the biological body to better communicate with the built design world, humanity will end disability in the 21st century and establish the scientific and technological basis for human augmentation, extending human capability, beyond innate, physiological levels, cognitively, emotionally and physically ([41], 3m27s-3m49s).

Herr follows a more common understanding of cyborg, which is more closely aligned to Clynes and Kline. And even though there is a surface compatibility to the definition of “technologized disabled people,” the difference lies in the politics that starts with, but is not limited to, the different understanding of the presence of cyborgs, stories of (im)perfection thus the role of maintenance, and the body-mind relation. This becomes further evident in another TED Talk by Herr, which has over twelve million views, where he demonstrates his bionic legs as a kind of technological fix to disability [42].

These kinds of stories get amplified by big tech companies like Meta (Facebook’s holding company) or Elon Musk’s Neuralink that have massively raised awareness of Neurotechnologies (and subsequently Neuroengineering) and invested considerable amounts of money in them. With that, the influence grows and also strengthens the often-toxic Silicon Valley attitude that partly comes from the deep entrenchment of transhumanist beliefs [43].

For example, Facebook’s Reality Labs joins the narrative of portraying disability as a diminished state from the norm: “Imagine a world where all the knowledge, fun, and utility of today’s smartphones were instantly accessible and completely hands-free. Where you could spend quality time with the people who matter most in your life, whenever you want, no matter where in the world you happen to be. And where you could connect with others in a meaningful way, regardless of external distractions, geographic constraints, and even physical disabilities and limitations” ([44], own emphasis).

Musk said that “Neuralink will ‘solve a lot of brain-related diseases,’ naming autism and schizophrenia as examples”. Fortunately, the author of the article adds: “Autism is not a disease” [45]. But is schizophrenia? This question relates to Margaret Price’s writing on pain, able-mindedness, and the label of “mental illnesses,” which, in this work, I can only point to as another site of inquiry [24].

Neuralink demonstrates perfectly how hype is generated, how it is “constitutive” and mobilizes “the future into the present,” in parts due to the “difficulties in the legitimacy of biotech” ([46], p. 6). It also serves as a perfect example for a specific type of ableism that is utmost relevant for this work: technoableism, a term coined by Shew explicitly to grapple with ableism in “the context of imagination, technology, and bodies” and describes “a rhetoric of disability that at once talks about empowering disabled people through technologies while at the same time reinforcing ableist tropes about what body-minds are good to have and who counts as worthy.” Technoableism allows “to recognize and work against ideas that reimpose and reinforce ableist claptrap under the guise of empowerment” ([47], p. 43).

Very recently, Musk has “trotted out” pigs to showcase Neuralink’s new Brain-Computer-Interface (BCI) implant that can connect to a smartphone [48]. Beyond that, Neuralink is not very noteworthy regarding its technical capabilities, and much of its presentation was “science theatre” that resembled known spectacles as Danielle Carr pointed out [49]. Another recurring aspect is animal testing as site of technology development and practices of manufacturing life. Here, we are within the complex networks of non-innocent and “forced into ‘becoming with’” ([36], p.37) intra-relations of human-animal-technology entanglements and chimeras that cannot be put in neatly purified categories on their own. Brain-Computer Interfaces, especially those that need to be surgically inserted into or planted onto the brain and are therefore deemed rightfully invasive, are tested in later stages almost exclusively on disabled people, while most non-invasive interfaces “are built and tested on able-bodied individuals” ([50], p.1).

There is something to be said about the possible kinship between laboratory animals and disabled people through positioning within these systems (and beyond). I cannot explore this here, but I want to point out that such a connection must be made with utmost care as it likely furthers the precarity of personhood status for disabled people. Especially when racism, and its reliance on charges of animality towards racialized people, is part of the intersection and thus further threatening for (disabled) BIPOC. Even more so in the context of the decontextualized and disembodied engineering on the nervous system that relies on image giving procedures and (purified) representations of signals from the nervous system. These data and models become the object and might create what Stephen Horrocks calls “Datafied Body Doubles: numerical stand-ins for the body that construct them as both usable and controllable” ([51], p.1–2).Footnote 15 Decontextualized and disembodied, it can just too easily be “conflated with whiteness” so that “whiteness as information” is the default and “in control of the body and other bodies” ([53], p. 2,6,7).

This underlines how crucial engagement of Science and Technology Studies — but even more Critical Disability Studies — with Neural Engineering is needed, and to analyze such assemblages in an intersectional-kyriarchal understanding. This does not prevent the foregrounding of certain aspects. However, it should thwart single-issue considerations when having the complex webbed networks of interlocking systems of privilege and oppression in mind.

#### The alternative is the emancipation of cognitive biotechnology into the hands of the disabled, allowing “crip world-remaking” and self-determination for those who need this technology. Reject the 1AC’s “curative imaginary” and focus on “earthly survival” for disabled people as the praxis for neuro-technological development by endorsing a “bodymind” ontology that subverts the compulsory abled mind

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I might have painted a rather dire picture of the current state of Neural Engineering. But it is my conviction that an “autre-mondialisation” ([36], p. 3) — another, more just, more caring world — can be materialized. While there are deeply ingrained (techno)ableist assumptions, (neuro-)technology is not per se an “anathema to crip worldremaking” ([6], p.3) but vital for disabled peoples’ survival and flourishing.

According to Nicolas Berberich, the “main motivation for building assistive technologies is to enable disabled people to lead an active and self-determined life” ([10], p. 21), which is a good place to start. But as Sara Goering and Eran Klein point out, Neural Engineers have almost no context with disabled people, often seeing them only as testers, in a phase where the device is advanced, and the options for change limited [54]. Nevertheless, their ethnographic work shows that there is an awareness of the lack of exchange and a desire for change:

If the neural engineering community wants to address the highest priority needs of the population, I think we have to understand those needs much better than we do now ([54], p. 11).

This finding coincides with my own experiences with Neuro-Engineers while doing intra-ventionist and ethnographic fieldwork. As one participant answered when asked by the course organizer why the particpant thinks that a Disability Studies lecture (held by me) was part of the sessions:

Because the course is centered around building tools that would be helpful for maybe a disabled person. And therefore, it is useful to understand their point of view and to gain a better understanding of the problems they are really facing and problems that they don’t really face, but we just care about solving (own transcription, also provided in [10], p. 48).

Based upon my positioning and (auto)ethnographic work, the question that concerns me is “How to engage with and ‘critique generatively’ Neural Engineering in a way, that ‘holds in tension the unjust imperatives of technoscientific innovation with the transformative capacities to shape matter and meaning through praxis’?” ([55], p. 756; [56], p.21).

My tentative approach to this is a “method assemblage” [57] that I put together to guide and inform my approach, conceptualization, and narration. I named this “monster” and “boundary creature” that I’m “co-minded” and “becoming with” [20, 29, 36] Criptical Neural Engineering (see Fig. 1), where criptical is a portmanteau of “crip(borg),” “critical,” and “cryptical”:

Crip(borg) as it privileges disabled perspectives on “cyborg technologies.” The cripborg is “a disabled person who selects technologies whilst anticipating the world they will encounter” ([28], p. 2). With that, the active “world-making,” “world-dismantling,” and “world-remaking” are focused [56]. We are not only “end-users,” but we shape technologies (and have done this already for a long time).

Critical for the “ethico-onto-epistemological” “response-ability” and accountability for the multiple ways assemblages, including method assemblages, can emerge and bring “objects into reality” or out of it in specific contexts, their nodes, and their material-semiotic effects ([59], p. 90; [60]). This is accompanied by the necessity for an “exploration of emancipatory potentials that could enable those affected by current developments to participate in the relevant processes and practices to improve them or replace them with better ones” ([61], p. 64).

Cryptical as we are disabled, mad, neurodiverse (and other bodymind variants), people who often appear incomprehensible to the non-disabled world. Our bodyminds are “written out of the future” ([23], p. 46) and were written out of history. Yet, we undeniably shape the worlds we live and find not only discomfort and unwanted pain, but also pleasure in (as for example the origin of the modern dildo shows), which is often subliminal for many non-disabled people and ableist institutions [37, 54, 62]. With that, our beings, ways, and actions appear as cryptic because they are not recognized, not decipherable, and thus mystic — and so are we. This is evident in the unthinkability of the position of “disability as desirable,” the devaluing of neurological differences, and the onto-epistemological violence [6, 20, 63].

Criptical Neural Engineering as mutually affecting method assemblage (inspired by [58], p. 875)

With that, I assume a position in which it is necessary to not just include disabled perspectives as resources but to center us, especially those who engage with neurotechnologies in the making, as neurotechnologies’ becoming is inextricably linked to the ways disabled people encounter the world.

The knowledge actions of the often non-disabled engineers are placed in the service of disabled people and cripborgs, serving to enable accessible and queercrip futures. Through this shift, the “curative imaginary, an understanding of disability that not only expects and assumes intervention but also cannot imagine or comprehend anything other than intervention” is no longer the main focus in producing neurotechnologies. Instead, the “earthly survival” of cripborgs and disabled people becomes the focal point ([23], p. 27f).

I use the figure of “prototyping” to convey a preliminary status. But that does not imply that Criptical Neural Engineering is reaching a “finished” state somewhen. As an assemblage, it is always becoming.

Feminist STS follows feminism’s history of “theoriz[ing] from practice” ([23], p. 14). It calls for attention to the politics of knowledge and technology production (including the own), the importance of embodiment, location, and subjectivity [64]. Taking accountability and responsibility are cornerstones, which also includes engaging with technoscience, striving for “better accounts of the world” ([33], p. 585ff.).

Crip Technoscience builds upon that, as the name already suggests, and enriches Feminist STS by demanding disability to be recognized. It is political, unruly, questions compulsory abledness, and focuses disabled “knowing-making” ([56], p. 3) It “calls attention to the powerful, messy, non-innocent, contradictory, and nevertheless crucial work of (…) practices of critique, alteration, and reinvention of our material-discursive world” ([56], p.1). Two claims are foundational for Crip Technoscience: first, that “natural and built environments are constructed, rather than given,” and second, that “science and technology shape the expression, enactment, or elimination of disability, impairment, madness, d/Deafness, neurodiversity, chronic conditions, and illness.” ([6], p.3).

Central for Crip Technoscience are “four political commitments”: “center[ing] the work of disabled people as knowers and makers,” “access as friction,” “interdependence as political technology,” and “disability justice.”

The first commitment acknowledges disabled people as “epistemic activists” that are situated “to produce the material conditions that allow disability to thrive.” The second commitment highlights that access is a political process. It can mean “an opportunity enabling contact,” but also “a kind of attack.” Access is understood beyond liberal and assimilation-based approaches and includes direct actions of disabled people that encompass “acts of non-compliance and protest.” The third commitment calls attention for the “relational circuits between bodies, environments, and tools to create non-innocent, frictional access.” The fourth commitment “emphasizes that disabled people are not mere consumers of, or objects for, assimilationist technologies, but instead have agential, politicized, and transformative relationships to technoscience” [56].

Critical Neuroscience connects with Feminist STS and Crip Technoscience through the “exploration of emancipatory potentials that could enable those affected” ([61], p. 63). It also provided me with a framework for possible activities that enriched the broader outlines of Crip Technoscience by a more specific approach to Neuroscience. It acknowledges the produced knowledge while stating that the “cultural contexts (…) adds new meaning” like processes of “reification.” A goal is to offer “alternative experimental designs,” which is similar to Goering’s goal of “educating” Neural Engineers through CBPR ([20], p. 47).

New Materialism is not a monolithic approach either. The aspects I chose come from Michael Feely’s engagement with it from a Disability Studies perspective. Deleuze’s and Guattari’s flat ontologies are also present in and can be neatly exemplified by Haraway’s and Barad’s writing with the material-semiotic understanding of matter [33, 59, 65]. Matter is no longer passive, but active (even vibrant), political, and also refuses re-essentialization. It adds to the DeleuzoGuattarian understanding of bodies in an anti-essentialist mode through viewing them with a lens of “actual” and “virtual” capabilities.Footnote 16 This makes it possible to regard the scientific knowledge of material sciences and not neglect them. Instead, they “can and do tell us what certain entities can or cannot do within specific contexts (…) and allow us create things which increase the number of things a body can do” ([58], p. 871; [67, 68]).

The bodymind concept follows this by rejecting the “Cartesian divide” [56]. This is not simply additive but demands that we fundamentally reconfigure our understanding [24]. “Bodymind” subverts ideas of a compulsory abled mind that is “trapped” in a disabled body, or of a separate disabled mind or mental illness from an otherwise seemingly natural non-disabled body. Furthermore, this subversion allows us to situate affect, sensations, and identity as fulminant materialized embodiment without essentializing it. With that, questions regarding the merger of corporeality and technology change. If we understand us as bodyminds, inscribing technology is not limited to our materiality, but incorporates our incomplete “split and contradictory” selves and positions, as Goering has argued [20]. This can be grasped by an intersectional and kyriarchalFootnote 17 analytical understanding that exposes the interlocking systems of oppression and privilege in which relative privilege can be understood as context-dependent, avoiding static and reductive images in analyses [3].

Science is part of the societies we live in and thus not outside of the interlocking systems of oppression and privilege. This includes Neural Engineering and the application of “engineering principles and neuroscience methods to analyze neurological functions” ([11], p. 286). There needs to be a fundamental acknowledgment of science(s) and engineering as “world-building and world-dismantling practices” that are intensely political ([56], p. 4). It needs more than compartmentalize-able ethics courses in (engineering) education, but an understanding that the technical is inextricably interwoven with ethics, politics, the social, and the “unmaking and making of definite realities” ([57], p. 32).

Otherwise, the questionable, and yet unquestioned, assumptions about disability and other categories like race, gender, sexuality, class, etc. will remain in the development of new technologies. This will result in a continuing onto-epistemological cycle of violenceFootnote 18 as “the space for technologies [is] almost exclusively [demarcated] to domains of cure, therapy and intervention — all of which are tied to rhetorics removing the intricacies of disabled lives from the range of human experiences” ([63], p. 2).

With Criptical Neural Engineering, I try to find a way to engage with the field of Neural Engineering in a generative way that does not forget the “unjust imperatives of technoscientific innovation,” while at the same time acknowledging that the “transformative capacities” which “shape matter and meaning through praxis” are central and can be used for an “autre-mondialisation” that fosters “disability justice” ([36], p.3; [56], p. 21f).

But until the (already emerging yet still fragile) change will take place and build accessible and inhabitable futures where disabled, impaired, (chronically) ill, mad, D/deaf, neurodiverse, queer, crip, queercrip (among other ways of) beings can flourish, we are mostly struggling to survive against and within interlocking systems that frame us (some more than others, depending on intersecting positions) as icons of an “undesirable future,” a future “no one wants,” resulting in our eradication ([23], p. 2).

We have to ask whose life gets (not) manufactured, by whom, as well as for what and why.

### 2NC – Links

#### Neurotechnological enhancements attempt manipulating humans’ moral agency. Changes to brain chemistry come from one’s environment, but biotechnology reduces the complexity of human morality to science.

Jotterand and Dubljevic ‘16 [Fabrice; Professor of Bioethics and Medical Humanities and serves as Director of the Graduate Program in Bioethics at the Medical College of Wisconsin; Veljko; Associate Professor of Philosophy and Science, Technology & Society (STS) at NC State; "Cognitive Enhancement: Ethical and Policy Implications in International Perspectives", pp. 42-57; Oxford University Press; Accessed 6-26-2022; RL]

Critique of Neuroessentialism

A narrow interpretation of the neuroscientific evidence could lead to a one-dimensional understanding of the mind–brain problem. Two major issues can be raised against neuroessentialism. First, there is the danger of reducing human behavior to neurobiology and using various techniques, psychopharmacology, or neurotechnologies to manipulate human behavior for social purposes. The hope is to use a neuroessentialist framework for the enhancement of certain character traits deemed socially desirable, as exemplified by Peter Reiner who states that

the mores of society are widely discussed in the news media, sometimes when a prominent figure exhibits a lapse in ethical behavior but also in the vigorous public debate of the “culture wars”. … One useful suggestion would be for neuroessentialists to join social theorists and educators in calling for improvements in moral and character education … thereby aligning social policy with the rise of neuroessentialism. 28 : 170

(p.46) This alignment between social policy and science qua neuroessentialism to determine and/or alter behavior has an air of déjà vu in the history of psychiatry (i.e., phrenology). Italian psychiatrist Cesare Lombroso (1835–1909), considered the founder of modern criminology, elaborated a theory based on evolutionary principles and body, skull, and brain physiology. In his work—since discredited—he attempted to explain criminal behavior through an interpretation of physical deviances such as large jaw, large ears, thick skull, and certain neuroanatomy. 37 Although neuroessentialism and phrenology have different premises to support their claims, both perspectives attempt to explain behavior based on neuroanatomical characteristics.

At this point, based on clinical evidence, it seems unclear whether specific behaviors (e.g., psychopathy) are acquired in childhood or adolescence due to neuroanatomical abnormalities (e.g., damage to the orbital frontal cortex can affect affective and cognitive processes essential for moral deliberation). In addition, any explanation of human behavior based solely on neuroanatomical characteristics should warrant some caution. T. B. Benning points out that there is a danger of stigmatization grounded on alleged neuroscience evidence. As he writes, “a brain scan diagnosis of psychopathy legitimises the preventive incarceration of a ‘high-risk’ individual, and … a static neuro-structural deficit may lead to a therapeutically nihilistic approach to such an individual on the grounds that ~~he is~~ [they are] ‘beyond rehabilitation.’ ” Combining these two positions—the perception of an individual as both dangerous and unchanging—may lead to a “lock them up for good” ethos. 38 : 564 The same claim could be made with regards to moral enhancement, which could result in a type of social engineering based on certain behavioral standards or expectations. 2 , 8 The alignment of social policy with neuroessentialism could reinforce stigmatization and undermine cognitive liberty. 39 , 40 , 41 , ii

The second issue relates the human moral psychology. The way that some proponents of cognitive enhancement conceptualize morality does not capture the complexity of human moral psychology. Consider the following characterizations of morality:

According to our preferred view, the core of our moral dispositions comprises, first, a disposition to altruism, to sympathize with other beings, to want their lives to go well rather than badly for their own sakes. Few would deny that this disposition is central to morality 42 : 168

or

I [Douglas] will take it as a suggestion that we cause ourselves to have morally better motives … I understand motives to be the (p.47) psychological—mental or neural—states or processes that will, given the absence of opposing motives, cause a person to act. Since I focus only on motives, I will not claim that the morally enhanced person is more moral, has a more moral character, or will necessarily act more morally than her earlier, unenhanced self. I will also try to avoid committing myself to any particular view about what determines the moral goodness of a motive. 3 : 229

One could also consider the project of enhancing morality by means of genetic manipulations, postulating the genetic basis of behavioral traits: “Since genes influence enduring behaviors, it might be possible to use biotechnology in a manner that would promote virtue, and thus serve as a means to improve ourselves, morally speaking.” 43

While recognizing that these three conceptualizations of morality do not represent comprehensively the moral enhancement debate, they nevertheless exemplify the potential failure to consider the complexity of human behavior and the nature of moral judgments. A reductionistic approach is problematic because, as stated previously, it limits morality to moral emotions but does not take into account that moral agents have developed particular understandings of notions of the good, the right, and the just that shape behavior and moral identity—a point more fully developed in the next section. In other words, moral intuitions do not operate in isolation but are informed by normative claims for their justification. This point is clearly made by Sinnott-Armstrong, who contends that “to determine whether moral beliefs [moral intuitions] really are justified, we need to move beyond psychological description to the normative epistemic issue of how we ought to form moral beliefs.” 44 : 48

In addition, there is strong evidence that adaptive changes in neural pathways occur in the brain based on environmental changes (such as social context, family context, etc.). Therefore, to assume that “we are our brains” is misleading. As human beings and moral agents, individuals are shaped by external factors such as the environment, the cultural context, and narratives. The brain’s ability to change its circuits and functions is the result of the brain interacting with external elements that, in turn, create a synergy between internal and external factors. As Glannon puts it, “the ability of the brain to alter its circuits and functions is not a property of the brain operating independently of external factors but of dynamic interaction between the brain and these factors.” 45 This process describes neuroplasticity , which is the ability of the brain to adapt to these external factors. It refers to a “change in neural structures and is usually the result of activity-dependent change in the interconnections among cells that constitute the structures. Enduring changes in structure result from repeated activation of some cells and pathways more than others, following (p.48) the principle that neurons that fire together wire together.” 46 The development of a sophisticated model of morality, one grounded on the latest advances in neuroscience concerning brain structure and functions, necessitates avoiding a blind trust in the ability of these modalities to address, in isolation, complex questions related to human behavior. Progress in understanding the brain and human behavior must align with the traditional disciplines of ethics, and vice versa.

This is not to say that there is no connection between brain structures or neurochemicals and human behavior. In the case of mental illness (especially neuropsychiatric disorders that affect behavior), “bad character” is not the issue but rather a neurochemical imbalance in conjuncture with environmental factors. However, in the context of moral enhancement, we are dealing with “normal and healthy” individuals who do not suffer from psychiatric conditions. Hence, the appeal to neuroessentialist constructs in discussions about the possibility of enhancing people morally is misleading.

Psychopharmacological and neurostimulation techniques assume that interventions on the brain, chemically or through electric stimulation, will heighten some character traits. This position is shortsighted because it does not take into account that environmental, cultural, and historical determinants shape the brain and mind. As Walter Glannon rightly states, “the mind emerges from and is shaped by interaction among the brain, body, and environment … . We are embodied minds in the sense that our mental states are generated and sustained by the brain and its interaction with external and internal features of our bodies. We are also embedded minds in the sense that the content and quality of our mental states is shaped by how we act within the social and natural environment.” 45 Glannon’s points corroborate psychiatrist Thomas Fuchs’s critique of neuroreductionism (the biological reductionism of the mind to the brain); he argues that the expression “you are but a pack of neurons” or “you are just your brain” is a category error and scientifically erroneous (an alternative approach to neuroessentialism is provided in the next section particularly with regard to social practices). In his view, “the brain is only an organ, and it is not the brain, but the organism or the living person that has conscious access to the world.” 47 cited in 45: 26 Moral agency requires individuals to engage in the world in relation to others, which in turn shapes and determines one’s own (moral) identity (moral capacity and moral content). This point is further corroborated by Shapiro 48 who rejects neuroreductionism on the ground that the mind by itself is unable to perceive and interpret any outside information. In other words, the mind and the body complete each other. He defends a position called the embodied mind thesis , which stipulates that psychological processes, to be complete, depend on the inputs of the body. In short, as Shapiro puts it, perceptual capacities such as vision and audition cannot stand in “body-neutrality.” 48

#### Neurobiological technology’s control of brain activity precludes independent moral thought.

Jotterand and Dubljevic ‘16 [Fabrice; Professor of Bioethics and Medical Humanities and serves as Director of the Graduate Program in Bioethics at the Medical College of Wisconsin; Veljko; Associate Professor of Philosophy and Science, Technology & Society (STS) at NC State; "Cognitive Enhancement: Ethical and Policy Implications in International Perspectives", pp. 42-57; Oxford University Press; Accessed 6-26-2022; RL]

In this section, I expand my criticism of neuroessentialism particularly in relation to the concept of moral agency. If the premise that “we are the brain” is correct, it means that, in principle, human behavior can be altered or manipulated at will through psychopharmacological means or brain stimulation. Brain areas associated with basic and moral emotions (including the amygdala, thalamus, upper midbrain, medial orbitofrontal cortex, medial frontal gyrus, and right posterior superior temporal sulcus) can be manipulated to achieve particular behavioral outcomes. For instance, using techniques like functional magnetic resonance imaging (fMRI), a brain–computer interface can be developed to regulate brain activity for the treatment of disorders of cognition, emotions, and behavior (e.g., psychopathy, pedophilia; see Sitaram, Caria, and Birnbaumer 49 and Renaud et al. 50 ). The approach of these procedures suggests the activation and the reinforcement of neural pathways in the brain associated with particular behaviors. 51 , 52

Although these techniques might have the potential to treat or at least mitigate the symptoms of mental disorders such as psychopathy and pedophilia, it is nevertheless important to examine how patterns of behaviors are acquired. Specifically, closer attention should focus on the factors, such as upbringing, culture assumptions, social environment, and the like, that determine and shape one’s moral identity and neurobiological makeup. Many neurobiological systems (e.g., the neural basis of morality) “must be ‘tuned up’ by experience in order to reinforce and motivate normal behavior, including moral behavior.” 53 : 46 In other words, individuals develop character traits and a moral identity shaped by their neurobiology but also by their upbringing, understanding of the good, and life experience. This dual dimension of moral development constitutes the internal and external constraints of moral agency. 5 The internal constraints concern the neural basis of morality or the capacity of an individual to respond morally grounded on ~~his or her~~ [their] neurobiology and psychological makeup. But the capacity to respond to moral dilemmas is likewise shaped by external factors such as life experience, beliefs, values, and presuppositions. Moral decisions, then, need particular philosophical and moral perspectives developed within the social context of the family and the broader community, which in turn shape and refine particular moral emotions. To reiterate Sinnott-Armstrong, 44 moral beliefs are justified by moving beyond a purely psychological account of moral life to a normative framework that guides and justifies moral emotions. The justifiability of one’s actions presupposes a specific understanding of notions of the good, the right, and the just based on a particular mode of practical reasoning as a tool for social interpretation. 54 Specifically, (p.50) this means that the idea of a philosophical and moral neutrality is illusory. Any discussion about morality presupposes a particular conception of rationality determined by a particular social environment and conceptions of the good and human flourishing. In short, a framework of moral agency presupposing a moral neutrality does not take into account the complexity of moral life, which includes emotional, motivational, and rational dimensions formed throughout one’s life.

This last point becomes even clearer when we look at the nature of rationality and rational actions through the lens of the work done by Alasdair MacIntyre 54 whose inquiry on the question of practical rationality provides insights pertaining to the question at hand. He rightly notes that rationality and rational actions are structured differently depending on the social context, time in history, and location. In his view, contemporary accounts of rationality and practical reasoning usually depict agents as uninformed in their rational deliberations by some processes antecedent to any action. In the words of MacIntyre,

[In] contemporary accounts of practical reasoning … we are presented … with agents as if detached altogether from any conception of or perception of the good or goods … such an individual exemplifies what I will borrow a phrase from the late A. A. Zhdanov to describe rootless cosmopolitanism. Such individuals speak … from a standpoint dictated by a stage in the dissolution of social traditions at which no form of practical rationality is any longer possible. 54 : 129, 135

An alternative to the “rootless cosmopolitanism” framework of practical reasoning and the resulting dissolution of social traditions would be to consider moral deliberation and the development of moral agency as part of an initiation into practices and their inherent skills and virtues for the attainment of the internal goods of these practices. This process of initiation takes place in various social contexts and includes domains such as science, politics, games, arts, and family life. 55 Importantly, each practice has a history in which particular goals, skills, and virtues (or standards of excellence) have been identified, refined, and accepted. 56 MacIntyre is quick to recognize that there is a potential for interpreting his line of reasoning as a form of relativism or perspectivism. However, his point is to stress that practical rationality (and its moral dimensions) does not occur in a vacuum. Individuals engaged in practical rationality inquire about it from some particular point of view within a social context that shapes right practices as exemplified within communities. 54 For instance, the game of chess, the sport of golf, or the practice of medicine requires socialization into the nature, goals, and standards for their practice, which have been (p.51) established, critiqued, and accepted by the community of chess players, golfers, and physicians, respectively. Any new participant will need to be socialized in these communities and will be required to understand the basic social rules, standards, and ends of the activity before being identified as a chess player, golfer, or physician. Ultimately, MacIntyre contends that human beings need to identify characteristics (concept of the good) that will help them flourish within a social context at a particular time in history. 54 The application of practical rationality entails a process of reasoning and learning about the ends of human existence and the goods necessary to achieve these ends. 57

To summarize, MacIntyre 57 holds that moral deliberation is an endeavor in which an individual constantly engages in the evaluation of internal and external constraints essential for moral agency. 5 , 57 First, moral agency develops within a social context embedded in a particular narrative. Although neurobiology certainly influences and shapes the moral development and makeup of individuals, personal journeys through life, education, interests, and human relations likewise determine one’s moral identity. Second reflections about the nature of the good are essential for human flourishing. Human beings are constantly engaged in reasoning about what constitutes the ultimate ends of human existence and how to achieve these ends. For MacIntyre, the failure to acknowledge that human beings are “practical reasoners about goods” results in their inability to flourish because they are unable to define and establish the nature and goals of practices. 57 These practices are determined by particular visions of the good life and define one’s own understanding of human flourishing. Third, as individuals develop as moral agents, they learn through trial and error: that is, each person goes “through a process of learning, making mistakes, correcting those mistakes and so moving towards the achievement of excellence, [in which] the individual comes to understand her or himself as in via, in the middle of a journey.” 56 The consolidation of these various learning experiences occurs in the application of practical wisdom (phronesis), which allows the integration of affective, motivational, and cognitive processes in a coherent entity. The final key point is the necessity to develop the skills for the integration of life experience and moral reasoning as necessary conditions for character development. The failure to do so would result in “intellectual blindness” and, ultimately, in the development of bad character because a person with such a trait does not have the knowledge to recognize what makes right judgment and action. 56 MacIntyre’s framework allows us to make an important distinction between having character traits and having character. The former refers to behavioral attributes that describe how people carry out particular activities, whereas the latter describes more fundamental features of an individual’s moral identity and ability to show moral strength. 5 Based on these definitions, moral enhancement technologies focus on some character traits to achieve particular ends but do not shape the more fundamental (p.52) moral attributes of a moral agent. Moral enhancement technologies place outside constraints to produce a particular outcome, whereas having character requires an internal process that motivates an agent to act based on reasons for action. 5 Building on the earlier distinction between moral capacity and moral content, and in the light of the preceding analysis, a robust understanding of moral agency cannot be limited or reduced to the alteration or manipulation of the brain structure or brain chemistry to enhance moral behavior. The notion of “moral” or “morality” intrinsically assumes an interpretation of human flourishing grounded on a particular understanding of the good. Technological means, as far as we know, do not provide any content to moral deliberation but only control affective and motivational responses to moral conundrums.

#### Post-enhancement discrimination becomes a new form of ableism – the aff cannot solve.

**Wolbring 13** (Eugenics Archives, "Human enhancement", https://eugenicsarchive.ca/discover/encyclopedia/5233c3905c2ec50000000085, 9-14-22, Accessed 7-6-2022)//ILake-SG

Galton describes eugenics as the “investigation under which men of a high type are produced”(Galton, 1883). and it is aimed to “bring as many influences as can be reasonably employed, to cause the useful classes in the community to contribute more than their proportion to the next generation”(Galton, 1904). This vision of eugenics is not limited to segregation and sexual sterilization two well-known practices of eugenics but it can also be applied to enhance humans beyond the species-typical, beyond the normal using genetic manipulations (Ball & Wolbring, 2013). The only prerequisite is that enhancements produce men of a high type (Ball & Wolbring). History of Enhancement Humans throughout history try to add abilities to their body. So far most of the abilities added were achieved through external means like the development of tools humans used to add body abilities to their repertoire. However, scientific and technological advancement increasingly allow for intervention on the level of the body that will increasingly generate human bodily enhancements that add abilities to the body its normally does not have. The enhancement of the human body is envisioned to happen through a) genetic interventions whereby the genome of humans is changed to introduce enhancements to the body b) drugs which are used to add temporary enhancements especially cognitive enhancements to the human body and c) the fusion of technologies with the body. As to technologies nearly every body part is under technology development (artificial arms, artificial blood, artificial blood vessels, artificial ears, artificial eyes, artificial gut, artificial heart, artificial legs, artificial organs, artificial retina, artificial skin, bionic knee, spinal cord prostheses, cranial, neural, and other implants, artificial joints, artificial muscles, artificial noses and tongues, nose on a chip, bio-artificial kidney, artificial liver, artificial lungs, artificial discs, artificial hippocampus (a chip implanted under the skull that can act as a memory repository), brain machine interfaces (implanted or non implanted version that allow the control of objects by thought that is linked to a computer), subvocal speech (allowing the translation of thought into speech through a computer without a need to actually speak). The human body is treated by many as an obsolescent technology in need of serious improvements (Wolbring, 2010). The ever increasing ability to generate human bodily enhancement products in many shape and forms enables a culture of, demand for, and acceptance of improving and modifying the human body (structure, function, abilities) beyond its species-typical boundaries. This facilitates the move beyond species-typical ability expectations toward an enhancement form of ableism that expects beyond species-typical of humans (Wolbring, 2005; Wolbring, 2006; Wolbring, 2008a; Wolbring, 2010; Wolbring, 2008b). As Beck states: “The degree to which, as well as the circumstances under which we want to allow or even support it, who has to pay for it, and how we can secure equality will be crucial questions for the following decades.” (Beck, 2007) Many type of possible enhancements are envisioned (Wolbring, 2005). A lively debate exists around numerous forms of enhancements. Some push for enhancements to be legalized or at least deregulated (Miah, 2010; Bostrom & Sandberg, 2009; UK House of Common Science Technology Committee, 2007; Bostrom, 2005; Savulescu, 2005; Caplan, 2004; Savulescu & Kahane, 2009; Harris, 2010; Harris, 2011a; Harris, 2011b) others questions the promotion of an enhancement form of ableism [e.g. (Sparrow, 2010; Sparrow, 2012; Koch, 2010; Wasserman, 2012; Bradshaw & ter Meulen, 2010; Larrere, 2010; Agar, 2007; Walters & Palmer, 1996; Ebbesen, Anderson, & Besenbacher, 2006; Kerr & Wishart, 2008)]. However in a 2009 “Human Performance Study” written for the European Parliament one reads, “Currently however, the EU has no platform for monitoring and discussing human enhancement issues. Arenas are lacking where the normative issues can be politically deliberated and the gap between the needs and the concerns of the broader public and the practitioners and experts bridged” (Coenen, Schuijiff, Smits, Klaassen, Hennen, Rader, & Wolbring, 2009). The situation is not much different for other countries and regions of the world. Human Enhancement and people with disabilities People with disabilities play a main role in the negative narrative around not being able to reach species-typical abilities. Indeed the medical model of disability reflects that sentiment. However, disabled people also are seen to play a role in the enhancement beyond the species-typical debate. The time is near were so called ‘therapeutic devices,’ generated to mimic species-typical body structures and expected body functioning will outperform in numerous functions the species-typical bodies giving rise to ‘therapeutic’ enhancements (Wolbring, 2005). Given this development it is not surprising that people with disabilities are also seen to play a key role in mainstreaming and increasing the general acceptance of especially body techno enhancements (Wolbring, 2005; Hughes, 2004). However disabled people might also serve as an indicator as to what will happen once human enhancements beyond the species-typical becomes a less than niche reality. People who are not enhanced might experience a disablement by the enhancement-haves in the same way the so called “sub species-typical” experience disablement by the “species-typical”. Anyone not having certain beyond species-typical abilities might face discriminative actions by the ones that have the beyond species-typical abilities (enhancement social model of disability) (Wolbring, 2010).

### 2NC – Impact

#### The aff causes commercialization – its an existential threat. Only vote aff if you are overwhelmingly certain that it is a good idea – 51% is not enough in the context of ableism

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The commercialisation and commodification of abilities It is important to track and critically analyse the commercial, political and cultural landscape in which human performance enhancement takes shape – and what are likely future trajectories. We currently see a legitimisation process taking place through the complex interaction of a broad range of actors, preparing the ground for wider acceptance of enhancement and its commercialisation. One important actor is the military, which is pursuing research and development of human enhancement to improve the capabilities of soldiers, but also driving a demand for technological fixes for war veterans impaired by combat. The gaming industry is another, quite different, actor that is simultaneously creating new demands and market opportunities for enhancement. The increasing sophistication of computer games, creation of virtual realities and new interfaces between player and machine are likely creating acceptance and temptations for a step-by-step move towards enhancements and increasing humanmachine integration. Sport is a third factor that likely increases the legitimisation of enhancement. Although deeply contested, doping is already pervasive and is seen as something unavoidable by many, both among athletes and the public (it is interesting to consider how the roles and status of the Olympics and the Para-olympics may shift in the future; what will be the implications when the best performances and records are all being achieved in the Para-olympics by ‘impaired’ athletes with extraordinary enhancements?). 30 In this legitimisation context it is of critical importance to anticipate the next moves by different interest groups. How, for example, will the pharmaceutical industry move into the realm of enhancement? This is where very likely a great deal of future profit will reside, and there are thus tremendously strong forces in motion. The commercialisation of the body is about to take another fundamental leap. Will we see a shift to enhancement drugs rather than ‘sick people’s drugs’, with all traditionally ‘normal’ and ‘healthy’ persons as potential customers – if they can afford them? The market logic behind these developments is powerful. Even if many people would be instinctively hesitant to take enhancement drugs or treatment to improve their capabilities, many would probably be inclined to do so if they were given the right reason or found themselves in particular circumstances. The rat-race of ability competition will make many feel obliged to join in – in order to keep the job, succeed in school or simply keep up with all the stresses of modern life. Those not able or willing to join in will lose out. Science, technology, governance and democracy – ways forward Human performance enhancement is only one aspect of new, emerging and converging technologies with implications for the disability and ableism discourse – and society at large. For example, new technologies that enable constant monitoring of body functions and implanted chips that keep track of where a person is located may be justified as useful devices to help sick and ‘impaired’ people with illnesses such as Alzheimers, but there is also the danger of a slippery slope towards a surveillance society with massive centralised control of our lives. The social acceptance level of sensors and of being monitored, as well as public sharing of personal information, are increasing constantly – just consider the phenomenon of Facebook. 32 New converging technologies will also play a major role in combating climate change. On the one hand, new large-scale, quick-fix solutions – ‘geo-engineering’ – are currently undergoing a legitimisation process, from having been completely taboo a few years back. 33 However, we can also foresee a development where ‘adaptation’ to climate change is not only confined to the physical and socio-economic environment but also to the human body. As living conditions change and become more extreme due to global warming, the demand and market for alteration of the human body and mind will likely escalate. The existential crises associated with a climate spinning out of control will open up possibilities for new, ‘therapeutic’ interventions. Common to all these examples is a lack of discourse around social impact, risk and governance, as well as a lack of participation by marginalized and directly affected groups. We need to ask what abilities we cherish and for whom they should be available when, for example, we discuss adaptation and mitigation to climate change. Do ‘impaired’ people have the same needs and are their needs assessments visible? What would a transhumanised model of ableism mean for responses to climate change? Would it mean the modification of the body beyond the species-typical as a means to adapt? Who would have access? What would this mean for other possible options? All these possible trajectories force us to tackle some very deeply rooted notions that have significantly shaped our modern societies, for example the privileging of certain values – such as competitiveness – over others – such as empathy – and to think about what abilities are favoured and seen as progress. What kind of progress and knowledge is it that we most need, to deal successfully with the multiple challenges confronting us today? What is needed to create sustainable, equitable and resilient societies? What is development really about? Clearly, the political, economic and ability context in which science, technology and social policy are developed is at the core and needs to be discussed in open, critical ways. This is certainly one of the most important conversations that should take place in our societies. Scientists, commercial interests, government decision makers, civil society organisations and social movements need a much broader, holistic analysis of the impacts of science and technology developments. As Wendy Harcourt exemplifies from the women’s movement, this may not be all that easy and fast – but it is utterly necessary. 34 Civil society has a particularly critical role in mobilising and influencing other actors – but only a handful of organisations have so far grasped the magnitude of the NBIC challenges and applied a framework which puts ableism centre-stage. It is my firm conviction that the confluence of challenges confronting us cannot be dealt with successfully without explicitly addressing various aspects of ableism. Even the most techno-optimistic groups such as the World Transhumanism Association acknowledge that we are moving into realms where, wrongly used, the new powerful technologies may lead to catastrophic scenarios and an end to humanity. 35 This, if anything, justifies an approach where our options for the future are discussed in the most serious and critical way – and where we are prepared really to act with caution and say no until we are convinced about what is a reasonable direction for the future. If we do not act now we are sleepwalking into a society which will move from today’s – unacceptable – disableism to its transhumanised form, with direct and dire consequences for the large majority of the global population and the pluralism so needed among humans.

#### Enhancement technologies create new ability divides and an underclass of the techno-poor disabled – ethics is a prior question

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Ability divides and the techno-poor impaired Enhancement technologies will very likely generate new ability divides. This would follow the pattern of the divides that developed after the introduction of many other technologies. As we seem incapable of narrowing most of the other divides (remember the vast majority of web pages that are still not accessible to blind people) and a large part of the world’s population still do not have the ability to access clean water and electricity it is doubtful that we will be able – under current policies – to close new ability divides despite transhumanists and others stating that wealth will eventually trickle down. 22 Furthermore, the introduction of every new technology has led to a new group of marginalised people and to new inequalities. As much as human enhancement technology is set to become an enabling technology for the few, it will become a disabling technology for the many. 23 If we continue on the present trajectory of rapidly expanding application and commercialisation of enhancement technologies, we will certainly also see the appearance of a new underclass of people – the ‘unenhanced’, or to use another concept of mine, the ‘techno-poor impaired and disabled’ people, people who are labelled ‘impaired’ and who encounter disableism because they do not have the enhanced abilities. A transhumanisation of ability divides can also be expected. Indeed, people and groups who promote human enhancement use the existence of other societally accepted divides to justify why an increasing divide stemming from enhancement should also be accepted. As the World Transhumanist Association argues in response to the risk of an increasing ability divide: ‘Rich parents send their kids to better schools and provide them with resources such as personal connections and information technology that may not be available to the less privileged. Such advantages lead to greater earnings later in life and serve to increase social inequalities.’ 24 I would argue strongly against this line of argument. Existing inequalities cannot be made an excuse for unleashing a technology and commercialisation trend that is likely to further exacerbate problems. It should be the other way round: before considering whether the technology is at all acceptable, careful assessments need to be made of the likely societal and equity and equality consequences. The fundamental and wideranging consequences of enhancement for all of society require thorough public debate and the taking of precautions. We need to ensure that no already privileged groups can gain positional advantages from enhancements and force their desires and self-perception onto others such as their children or children-to-be or society as a whole. And we need seriously to think about the consequences of distributive injustice and the impact of it on social cohesion and global stability. Responsibility Human performance enhancement will require changes to the concept of responsibility. The transhumanists consider it to be a parental responsibility to use genetic screening and therapeutic enhancements to ensure as ‘healthy’ a child as possible. 25 Under such a model, would it be child abuse if parents refused to give their children cochlear implants, if they felt there was nothing wrong with their child using sign language, lip reading or other alternative modes of communication? Would it be child abuse to fail to provide a ‘normal’ child early in life with a brain–machine interface? We need urgently to understand the possible scenarios and trajectories of the future and their implications. Are we ready for a society where we have full freedom – and thereby responsibility –to choose and design both our own and our children’s abilities and traits? What are areas that should be left untouched and how do we, as a species, collectively determine the borders that we should not cross? Transhumanisation of personhood All UN-based documents use the term ‘person’ as a descriptive term to highlight certain rights. However, this term is not set in stone. Throughout history, many humans have not been seen as persons and in some places some are still seen as non-persons today. What are the criteria for personhood? May we end up in a situation where some people who are perceived as persons today become non-persons? Is there a limit to how much technological parts and modifications a person can have and still be considered a full human? Will one only be seen as a person if one has received certain enhancements? Will personhood depend on certain levels of cognition or other abilities? In this regard it is important to note that the Disabled People’s Association (DPI) bioethics resolutions from the 6th World Assembly in October 2002 in Sapporo, Japan, states ‘We defend and demand a concept of “person” that is not linked to a certain set of abilities’. 26 This demand is of particular importance as the transhumanisation of ability divides is a likely future scenario. A transhumanised version of personhood which links personhood to certain abilities beyond the species-typical might become part of the personhood debate of the future which might lead to various very problematic consequences. Body politics, performance, disablement and pluralism These developments will increase the number of people perceived as ‘impaired’, because as enhancement technologies are developed, the definition of who is ‘impaired’ will change. The transhumanist model of health sees every human body as defective and in need of improvement, such that every unenhanced human being is, by definition, ‘impaired’. Impaired people are those who are not able to improve themselves beyond what is normal for our species (the ‘technopoor impaired’). This development has the danger of decreasing pluralism among humans. Tolerance and appreciation of human diversity is thus at stake. Disabled people can opt to be seen as inherently defective and subnormal, in need of being fixed by science and technology towards a societal norm of the so-called non-disabled (for example, giving legs to amputees that will be as good as or worse than ‘normal’ biological legs). Beyond this, they can opt not only to be fixed to a speciestypical norm but also to be enhanced, augmented beyond the species typical norm (for example, giving bionic legs to amputees that work better than biological legs). Alternatively, they can opt for changing the physical environment, the interaction with the physical environment and the societal climate to accommodate their biological reality (for example, giving wheelchairs to amputees and making the physical environment wheelchair-accessible. I think it’s fair to assume that in a situation where ’impaired’ people feel that an accommodation of the environment (physical and socially) is not realistic they will opt for enhancements. Indeed, many transhumanists are very aware of the potential to use disabled people as a trailblazer for the acceptance of transhumanist ideas and products. 27 As James Hughes, the former executive director of the World Transhumanist Association, writes, ‘Although few disabled people and transhumanists realise it yet, we are allies in fighting for technological empowerment.’ 28 However, as many ‘traditionally disabled people’ are poor and live in low income countries they have far more to lose than gain from such a shift. They might think that they are better off because they would share that lack of ability with others who can’t afford the enhancement, but we can expect that resources would rarely reach people who are below the traditional norm. This is because with the same amount of money more people who already fit the traditional norm could be enhanced than people who are different. As Murray and Acharya have written (Murray is the father of ‘disability-adjusted life years’ – a measure developed to give decision-makers a tool to judge whom money should go to in the allocation of health interventions), ‘individuals prefer, after appropriate deliberation, to extend the life of healthy individuals rather than those in a health state worse than perfect health’. 29 If this is indeed true it means that society is likely to choose to enhance the lives of healthy individuals rather than those in a state of less than perfect health because it will be seen as better value for money. The push for enhancement versus cure might also make sense from a general market perspective. Healthy people very likely have more money to spend and therefore this group is more profitable than sick people. Companies mostly go where they can make money. That is why there is already more of a focus on diseases of the middle and high income countries than the diseases of low income countries.

#### The aff pushes us into a Techno-Eugenic future

**Abdelmoumen and Newman 19** (\*Mohsen Abdelmoumen and \*\*Stuart Newman, Reporter for CounterPunch, \*\*PhD, professor of cell biology and anatomy at New York Medical College, founder of the Council for Responsible Genetics. CounterPunch, "Are We Headed Toward a Techno-Eugenic Future?", 9/10/2019, https://www.counterpunch.org/2019/09/10/are-we-headed-toward-a-techno-eugenic-future/, accessed on 7/4/2022)//gideon

When we read your writings, we become aware of what is being done in the field of genetics and biotechnology. You are a whistleblower in what is happening in science. Where do you think we’re going? Are you optimistic about the future of humanity?

I wish I could find some countervailing impulse, but it seems to me that we are headed for a techno-eugenic future. Human-animal chimeras are already being produced; calibrating their acceptable degree of humanity will just be a matter of social mores. Right now, pigs with human brains are considered a step too far, and the supervising scientists promised to destroy any mixed-species animals that display evidence of human consciousness. However, when business models emerge involving, for example, post-surgical reconstruction, or cognitive enhancement, using tissues from such animals, this will almost certainly change.

Regarding embryo engineering with the intention of producing improved offspring, the technology is certainly not ready for general application. I cannot conceive of a biologist or a knowledgeable affluent person who would consent to have their prospective children tinkered with by these methods. For that reason, Walter Isaacson’s question in his article referred to above of whether the rich should be allowed to buy the best genes, is misleadingly premature. Any given gene, even it can be shown to be the “best” in a given context, is an infinitely replicable resource. The correct question is rather whether (and more realistically, how) the technology can be made suitable for the rich.

In his essay, Isaacson discusses the proposal by James Watson, the eugenicist Nobel laureate, to make genetic engineering “more equitable” (i.e., available to the poor) by diminishing patent protections on the technology. Isaacson takes this as a late-in-life expression of liberal generosity by Watson, but this seems naïve. Given Watson’s track record, we know what sector of society he believes is most in need of genetic cleansing, and who would be most suited to be the first-line experimental subjects before it is ready for prime time.

## K – Capitalism

### 1NC – Capitalism K

#### Cognitive biotech empowers the technocratic elite to create worker-slaves that toil for infinite production and accumulation of wealth – a decentralized approach is key to avoid consolidation of power in capitalist systems of governance

**Preston 21** (John Preston, Faculty Dean Research (Social Sciences) - Professor (R)Department of Sociology - University of Essex. The SAGE Handbook of Learning and Work, "Where did the Learning Go? Artificial Intelligence, ‘Use Sovereignty’ and ‘Pixarfication’ in Factories of the Future", 10/26/2021, https://sk-sagepub-com.proxy.lib.umich.edu/reference/the-sage-handbook-of-learning-and-work/i4942.xml, accessed on 6/28/2022)//gideon

Capitalism revolutionises the means of production but even within this process we hang on to transversal concepts. Workplaces are paradoxically materially different but fundamentally similar in terms of their trajectory over the last two hundred years. Although a 19th-century Manchester factory worker might find it difficult to understand the clean and mechanised Japanese car production plant line, there would be enough similarities to provide some familiarity. The discipline of the clock and of the production process, waged labour and the fatigue of work would hardly have changed at all. In all of this, learning at work could be assumed to be another seemingly transversal concept. The ideas that learning ‘on the job’ is required to undertake a task and that schooling might be required to deal with written and verbal instructions, as well as the recognition that advanced qualifications are necessary for high-level engineering and technical tasks, have similarities across most cultures and contexts. However, it is easy to mistake these historical and geographical parallels for a timeless universalism in terms of the relation between learning and work.

This chapter takes a critical view of the universalism of that relationship and argues that changes in the workplace, some already underway and other prefigurative changes, are producing a unique shift in the nature and location of learning whilst maintaining fundamental relations between labour and capital. Such changes make learning unrecognisable by even broad epistemologies of human pedagogy and include shifting the locus of learning from humans to products through ‘use sovereignty’ and the ‘Pixarfication’ of manufacturing and services, the rediscovery of competence theories of learning and their current alignment with machine learning, and the impact of AI on fragmenting learning entities into the ‘skills cloud'. The future is one in which whilst the workplace appears to [Page 640]be teeming with learning entities where it is difficult to locate learning as we would recognise it, particularly in human workers.

One focal point for this change is the rise in Artificial Intelligence, or AI for short, which has become shorthand for a paradigmatic change in nearly every aspect of contemporary society. Whilst AI may be far from meeting the expectations of most early theorists (particularly in terms of general intelligence), as a tool for significant changes in society it is very powerful. AI is not often clearly specified in accounts of modernisation and it commonly stands for anything from simple computerisation that extends little beyond mechanisation to General Artificial Intelligence (GAI) that would equal or surpass the abilities of the working human. Indeed, fears of an ‘intelligence explosion’ or ‘learning explosion’ where an AI entity could bootstrap itself to levels of intelligence well above human sentience abound in our culture. Articles on AI in the workplace in publications such as Wired magazine or illustrated in TED talks, often present AI as involving an ever-closer linkage with the human. Images of cyborgs or transhuman hybrids abound, not dissimilar from the covers of science fiction magazines of the 1950s. AI often produces ‘weird tales’ of how humans might come to work in the future. This might involve a close bodily and mental fusion of humans, AI and robots, or the displacement of humans completely by (often anthropomorphised) robots. AI is a hot topic in sociology and education, as much as in business, and the idea that AI could, alongside humans, produce hybrid forms of ‘cyborg learning’ has become a fruitful line of research in education and robotics. In particular, the field of ‘post-humanism’ has produced a number of conceptions of how learning can be articulated between humans and other entities such as robots and AI. These conceptions dismiss anthropocentric notions of learning in favour of ones that do not distinguish between or privilege entities, are dismissive of boundary formation and emphasise collective learning properties. In a recent synthesis Hasse (2020) describes post-humanist learning theory as an ‘… ultra-social collective of social and material collectives’ (Hasse, 2020, p. 1). This ‘collective of collectives’ includes entities of all kinds (Human, robot, AI, animal, material and non-corporal) which are in constant articulation with each other.

For those of us living in the improbably futuristic year of 2021 the future is not quite as exciting as this. Work is still the predominant activity of humans, who struggle continuously to survive in a capitalist society, and the conditions of work have changed very little from early capitalism. Time is still regulated through the clock (Postone, 1993). Our working processes are recorded and regulated so that not a second is wasted in idleness. Research on the quantified self at work (Moore et al., 2017) shows that devices which are used to monitor workers in the contemporary era, ranging from biometric devices to BCI (Brain Computer Interface) technologies, rather than liberating workers from capitalist toil, act to reinforce standardisation. The ‘means of cognition’ (Dyer-Whiteford et al., 2019) have become a fundamental part of capitalism. Like other ‘means of production', the capitalist conversion of human and machine cognition into fixed capital (computers, robots and AI) has increased the scale and scope of capitalist work whilst retaining the same principles of exploitation and the extraction of surplus value from living labour. Although Nick Land (2018), the poster boy for accelerationism, exhorts us not to live in ‘transcendental miserabilism’ and to embrace the future, the liberatory cyberpunk ‘phuture’ he predicts does not seem to be on the horizon.

Marxist critiques of the relationship between AI and humanity are not always as optimistic as post-humanist articulations. Despite comments in Grundrisse concerning the ability of machine labour to form an alternative to capitalist work (Marx, 1993), in Capital machines are largely seen as methods of increasing control of labour processes, [Page 641]increasing unemployment and exploitation (Marx, 1976). There are similar tensions in other Marxist works concerning the relationship between AI and humans. For example, Dyer-Whiteford (1999) considers that although digital technologies can be used by capitalists to control workers and as a form of ‘divide and rule', they also provide possibilities for workers to control production and to create new forms of machine/human hybridisation that might lead to new forms of economic activity outside of capitalism. Bastani (2019) sees technology as an oppressive feature of contemporary capitalism whilst drawing on a number of existing technologies, including AI and post-humanism, to argue that these features of capitalism might enable a ‘fully automated’ Communist future. Other works are more critical of human/AI hybridisation and communal technologies. Dyer-Whiteford, Kjøsen and Steinhoff (2019) argue that a transhumanist, AI-enhanced workforce would labour under largely the same conditions as current workers, and Griziotti (2019) considers that generalisable technologies that might be expected to form part of a ‘digital commons’ can be recuperated by capital. These perspectives reflect the duality of optimistic and pessimistic views within Marxism on technology but there is a fundamental tension in Marxist theory in evaluating specific capitalist technology in terms of its emancipatory or revolutionary aspect, particularly in terms of AI/human synthesis. Capitalist accumulation through technology has the ultimate purpose of expanding the creation of ‘value’ at the expense of human existence, meaning that any form of AI/human synthesis should not be assessed only in its own terms but as part of capitalism as a whole (Kurz, 2014). In many ways such developments are a continuation of current tendencies in capitalism towards the capitalisation of humanity as ‘human capital’ (Rikowski, 2002). However, although AI might not change the relations of capitalism it does fundamentally change work and workplace learning. Primarily, the position of the human labourer as the locus of learning is irrevocably changed by the reconceptualisation of work as an arena of learning entities rather than human beings. To examine this we will first engage in some (near) futurology by examining what the ‘factory of the future’ might look like.

In the United Kingdom (UK) the EPSRC (Engineering and Physical Sciences Research Council) which is part of UKRI (United Kingdom Research and Innovation) – a government body that allocates competitive research monies to academics – has funded several projects to consider what the factories of the future will look like by the year 2030. These projects analyse current technological, social and cultural trajectories to engage in grounded predications of the future in which proof of concept can be shown through actually existing technologies. These projects have involved looking at concepts such as human-based factories which will optimise the production of medications and factories that use materials to produce products which will last forever, adapting themselves to avoid damage.

One of these projects, of which the author is a part, ‘Chatty Factories’ (Burnap et al., 2019), has profound implications for workplace learning and the role of the human and AI in the production process. The idea of the ‘Chatty Factory’ is that products (and to some extent services) can already be developed which have human-like capabilities in terms of perception of their environment (through sensors and other methods of recording the nature of their use), communication with the manufacturer (through wireless technologies and internet connection) and sentience or at least some form of so-called learning (through AI or machine learning). This leads to the possibility of ‘chatty products’ that can communicate with the factory and the [Page 642]production process. Some companies, such as airlines and some luxury car manufacturers, already use elements of ‘chatty products', but as the cost of this technology falls such methods will become ubiquitous and applicable to a wide range of products, even FMCG (Fast Moving Consumer Goods). This change presents a profound challenge to the nature of the current consumer and manufacturer paradigm towards what can be called ‘use sovereignty'.

Early factory production was characterised by producer sovereignty, where a usually homogenous product was produced on a mass scale and sold to consumers using standardised advertising and mass marketing campaigns with little product differentiation. This orientation is summed up by Henry Ford's famous maxim regarding the Model T Ford that customers could have any colour so long as it was black. This model had a form of workplace learning where workers were trained for one type of routine or action on a production line, as repetition and consistency were highly important. This producer orientation had implications for workplace learning in terms of the Taylorist nature of the labour process and of training. Work was divided into a series of repeatable actions that were tuned and honed by experts in scientific management, which were then reproduced accurately by humans on a consistently moving production line. Through a finely tuned division of labour a car could be built by using the labour of workers divided by specialism. In terms of workplace learning this had two major implications. Firstly, training was ‘preloaded’ into human workers through a process of initial learning. There was little formal learning on the job. Taylorism prefigured much of the competence and competency movement in workplace learning (see below). Secondly, there was a need for support for individuals, both inside and outside of the workplace, in terms of learning how to deal with the boredom and repetition of work (which also included how to informally ‘game’ the system of production). As a result of this, a sociological department was established at Ford to enable families to function more effectively in supporting the (usually male) worker.

The move to consumer sovereignty, heterogeneous products and increasingly customised commodities, led to a Post-Fordist system of production. Post-Fordist production, also known as Toyotism, heralded a system of production where workers would need to be skilled for flexibility and re-skilled for a production line that would require changes to production on a frequent basis. Although in many manufacturing firms the production line remained, and the overall labour process still relied on forms of measurement similar to scientific management, there was a change in the nature of workplace learning. Rather than workplace learning being front-loaded (so that workers were trained in a particular task) and compensatory (to learn formally and informally to deal with the pressures of work), learning ‘on the job’ and more flexible forms of workplace learning came to dominate the workplace. Workers were expected to reskill and upskill as the production process consistently changed.

In both Taylorist and Post-Fordist production systems there were similarities in terms of workplace learning. Firstly, learning was located at the level of the human and human communities and societies rather than at the level of objects and artefacts. Whilst there was some consideration of human/machine symbiosis in fields such as cybernetics, human factors and prosthetics, the human (even within the framework of a learning organisation) was the locus of learning. Secondly, although contemporary theories of learning that draw on post-humanism, cyborg theory and assemblage allow us to retrospectively reinterpret the human focus of workplace learning during this period, substantively there was always a human focus to workplace learning. Both product (Taylorist) and consumer (post-Fordist) orientations were orientated around a human subject as the ‘learner'. This was the case even when an impoverished notion of learning was used [Page 643](such as in Competence Based Education and Training - CBET). Thirdly, workplace learning in both consumer and product orientations was based on the idea of an external vantage point or external expertise from education and training experts. Fourthly, work-based learning was a trans-organisational discipline in terms of building a home in universities with a wider connection to the fields of education and pedagogy. Although workplace learning may be adapted differently across workplaces, organisations and countries there was a principle that knowledge could be transferred between contexts. Knowledge of workplace learning was not idiographic and isolated but could form part of a wider body of knowledge.

The ‘Chatty Factory’ (chatty being UK slang for talkative) model develops a new model of sovereignty, use sovereignty where the use of a product determines its own production (detailed in Burnap et al., 2019). Advances in sensors, technology, cybersecurity, wireless connection (5G), new materials and AI/machine learning mean that products can model human senses and gain a limited sentience (or at least the ability to use machine learning, a form of statistical analysis to determine a course of action or judgement). There are already examples of products which can communicate back to the process of production that might be called ‘chatty products'. For example, an airline might place sensors in their aircraft that enable them to receive direct information from aircraft in flight. This in turn allows them, if required, to modify future production. The ‘Chatty Factories’ model allows for products which collect information about their use ‘in the wild'. As the product is used it sends a constant stream of information back to the factory. Using human and AI-based data collection methods the product ‘in use’ determines its own production. In practice, this process has to involve various methods of mediation. For example, human ethnographers are employed in interpreting the product's use ‘in the wild', designers are involved in interpreting the product data when it arrives at the factory, and humans interpret the product data when it is processed into production plans (alongside robots) in the continuous production of the product. ‘Chatty Factories’ also require a large investment in cyber-security as there are opportunities for data leakage and corruption.

The ‘Chatty Factories’ model is designed for the factory of the near future (2030), but it is possible to envisage how this might operate in practice today. Imagine that a factory produces bicycles each of which contains a number of sensors that examine the use of the product in terms of location, speed, damage to the tyres and frame, temperature, accidents and final disposal. The use of the bicycle would determine the information sent back to the factory. For example, if the data discovered that products used ‘off road’ were not robust in terms of the integrity of the tyres then the factory would start to produce bikes which had thicker tyres mitigating the problem. Without human intervention in decision making the production of the bicycle would have automatically been optimised as it is use that has sovereignty rather than the consumer or producer.

This example may seem far-fetched given current technologies but ‘Chatty Factories’ have proved that the concept works at various stages of the process and is an elaboration of existing tendencies in what has been called ‘Industry 4.0’ or the 4th Industrial Revolution (Schwab, 2016), in which a variety of technologies such as the Internet of Things (IoT), AI and digital manufacturing are combined to produce a transformation of industrial systems. Despite the advanced technological nature of such systems, it is not necessarily the case that such systems lead to increased worker autonomy (Butollo, Jürgens and Krzywdzinski, 2018), and the ‘datafication’ of production potentially increases the possibilities for worker surveillance (Beer, 2018; Thomas, Nafus and Sherman, 2018).

Of course, there are differences in the implementation of these technologies in [Page 644]various industries and the progression towards ‘Industry 4.0’ may be uneven. However, in the future it is indeed possible that this might be an ‘unmediated process’ (even with human intervention it could still be considered that the process is assisted rather than enabled by humans). Products ‘in the wild’ would take in data which would be communicated back to the factory. This ‘sense data’ would be optimised by an algorithm to maximise profits, which may involve more robust manufacture to minimise faults/returns, reducing costs by minimising redundant features or making the product more appealing to consumers. This would then feed into an automatically adjusted production process. In this way products using AI are ‘chatty’ in determining their own production. Products and components may also be similarly ‘chatty’ in the factory, providing consistent and constant data. Through the IoT (Internet of Things) and wireless technology constant communication is plausible. A sophisticated AI may even decide to evolve products to conduct experiments in changing matter through a process which can be called ‘speciation', the production of new species and sub-species of products. So in the above bicycle example, a new ‘mutant’ bicycle might be produced with extra thick tyres to see how it is used in ‘the wild'. This is not just a further example of customisation and consumer orientation but a paradigm shift to ‘use sovereignty'. Every item in the factory, including robots, AI, components and products inside and outside of the factory, is ‘alive’ with sense and communication. This whole process of production might be best categorised as Pixarfication, Pixar being a US company that makes movies where toys are sentient (the ‘Toy Story’ films), robots are sentient (the robots and AI in ‘Wall-E') and there is a sense of everything possessing sentience through technology (‘Cars') or magic (‘Brave'). This pan-psychism of the factory and its products has a profound implication for learning at work.

In the ‘Chatty Factory’ humans are no longer the locus of learning. The most important learning entity in production becomes the product, which, in conjunction with other non-humans and humans, determines its own production. Learning in the workplace has become a consistent process involving the product as a learning object creating itself in conjunction with increasingly sophisticated forms of AI. The human is not unimportant as they retain a place as an entity in a learning assemblage but their position as the significant learning object has been completely displaced. The subject of workplace learning is now the commodity. How it learns outside the workplace in its environment and how it communicates that learning to other entities within the factory has become the pedagogical question. In this perspective, human learning appears ephemeral. There is now no transhistorical reason to consider learning, including workplace learning, as it is conventionally defined. Capitalism not only appears as Marx said to be a ‘mass of commodities’ (to highlight the ephemeral nature of the form of value), but this ‘mass of commodities’ becomes determinant in its own production removing human agency from the process. Of course, in Marxist interpretations the process of production is already inhuman in terms of its determination for profit (which has its basis in the Marxist conception of value) as a real abstraction (Postone, 1993). Here the claim is that commodities literally and directly determine their own production so that the real mediation and abstraction have visceral significance in reality.

#### Failure to act causes cyber-scientific management that optimizes every second of every day for maximum profit

**Preston 21** (John Preston, Faculty Dean Research (Social Sciences) - Professor (R)Department of Sociology - University of Essex. The SAGE Handbook of Learning and Work, "Where did the Learning Go? Artificial Intelligence, ‘Use Sovereignty’ and ‘Pixarfication’ in Factories of the Future", 10/26/2021, https://sk-sagepub-com.proxy.lib.umich.edu/reference/the-sage-handbook-of-learning-and-work/i4942.xml, accessed on 6/28/2022)//gideon

Relating outcomes to competences, which are then optimised through machine learning, and the rise of ‘use sovereignty’ are ways in which learning is displaced from the individual worker and increasingly from work-based learning in terms of collectives of workers. Paradoxically, learning seems to be occurring everywhere in the contemporary factory but it is not happening at a human level as epistemologically CBET and machine learning are distinct from what we would understand by learning. This displacement of learning might occur not in terms of a single computational or organisational ‘mind’ co-ordinating activities but rather as a system of AIs and machine intelligences that collectively seek to optimise profit and cost functions determined by the employer who ‘wireheads’ these into the organisation. In terms of human outcomes, AIs work to build up a ‘grammar’ of outcomes, behaviours and combinations. This is the new ‘scientific management’ where humans are ‘chopped up’ into outcome entities, either individually or collectively, foreshadowed by Marx in Grundrisse:

The worker's activity, reduced to a mere abstraction of activity, is determined and regulated on all sides by the movement of the machinery, and not the opposite. The science which compels the inanimate limbs of the machinery, by their construction, to act purposefully, as an automaton, does not exist in the worker's consciousness, but rather acts upon him through the machine as an alien power, as the power of the machine itself. The appropriation of living labour by objectified labour – of the power or activity which creates value by value existing for-itself – which lies in the concept of capital, is posited, in production resting on machinery, as the character of the production process itself, including its material elements and its material motion. The production process has ceased to be a labour process in the sense of a process dominated by labour as its governing unity. Labour appears, rather, merely as a conscious organ, scattered among the individual living workers at numerous points of the mechanical system; subsumed under the total process of the machinery itself, as itself only a link of the system, whose unity exists not in the living workers, but rather in the living (active) machinery, which confronts his individual, insignificant doings as a mighty organism. In machinery, objectified labour confronts living labour within the labour process itself as the power which rules it; a power which, as the appropriation of living labour, is the form of capital. (Marx, 1993, p. 693, my italics)

What is relevant in the above quote is not just how machinery colonises labour (the ‘acting upon’ of machinery) but also how labour unity both between and within the individual labourer is ‘scattered’ among the individual workers. As the British philosopher Nick Land describes the process of AI takeover in industry:

[Page 647]Modern production seems like a dream of cyborg colonization work, a dream that makes the nightmare of Taylorism seem idyllic.

Industrial machines dismantle the actuality of the proletariat, displacing it in the direction of cyborg hybridization, and re the plasalizingticity of labour power. The corresponding extraction of tradable value from the body sophisticates at the interface, dissociating exertion into increasingly intricate functional sequences, from pedals, levers and vocal commands through the synchronization of production-line tasks and time-motion programs, to sensory-motor transduction within increasingly complex and self-micromanaged artificial environments, capturing minutely adaptive behavior for capital. Autocybernating market control guides the labour-process into immersion. (Land, 2018, p. 435, my italics)

Here, Land takes further Marx's 19th-century considerations of what is happening to labour in the process of industrial production. Labour in all its forms (mental and physical) becomes ‘dismantled’ into discrete components through AI realising the myriad ways in which it can be combined (its plasticity) where human behaviour is captured. In each of these quotes, the idea is that labour is consistently pushed to the limits of human embodiment as it becomes captured by machinery into a ‘grammar’ of human labour far surpassing the ideas of scientific management. In these scenarios learning at work does not exist within human entities but in ‘chopped up’ human assemblages that would be integrated with machines and data in many different forms. The learning takes places within various AIs in terms of a ‘skill bank’ whereby various entities would be charged with ‘producing’ types of behaviour. As stated above, this would be an impoverished conception of human learning where learning would become reconceptualised as pure outcome.

In the field of consumption, AI is already building up data on our behavioural patterns through platform capitalist tools such as Facebook, Twitter and Google. Reactions and behaviours are quantified and used to build up a profile not only of our individual behaviour but of a model of human behaviour. Existent disciplines such as Psychology and Sociology in universities appear to be rather insignificant compared to how accurately social media giants can predict (and modify) attitudes and behaviours based on the predictions of ‘Big Data'. In the workplace, quantification also gathers and uses data on how workers behave and respond. As considered above, in many ways this is an extension of scientific management whereby the movements of workers were laboriously logged and tested in a series of scientific experiments. Photography was used to map and chart each human movement as part of a production process so that each factory worker was subject to optimisation and eventually computer technology developed more complex techniques of process and production management which were used to record and simulate worker behaviour. As technology improves, modes of quantification have become increasingly extensive (Moore et al., 2017). High performance digital cameras and sensors are used to record worker movements at sub-perceptual levels. Smartwatches can record worker biometrics and allow instant feedback on worker attitudes. Worker interactions and vocalisations can be measured by using Alexa-type devices in the workplace. Employee sentiment can be measured by conducting text analysis of their social media posts. Such devices can also be used to measure worker resistance (including union organisation) and the worker's capacity for disruptive activity. These are all forms of worker surveillance. Through these means, labour power production is becoming even more extensive to reflect not only a wider variety of physical and mental attitudes and behaviours, but also worker attitudes and emotions. Compliance and satisfaction can be measured not only through a periodic worker satisfaction survey but constantly and [Page 648]consistently during every moment of an employee's day.

This is not just a process of quantifying each individual worker, it also involves building up a model of human behaviour in general. Zuboff (2019) argues that ‘Surveillance Capitalism’ is not just a method of increasing productivity in certain circumstances but also a method for producing a residue, or surplus, from these surveillance activities in which workers are dispossessed of skills. Zuboff refers to this activity as ‘behavioural surplus':

Surveillance capitalism begins with the discovery of behavioral surplus. More behavioral data are rendered than required for service improvements. This surplus feeds machine intelligence – the new means of production – that fabricates predictions of user behavior. These products are sold to business customers in new behavioral futures markets. The Behavioral Value Reinvestment Cycle is subordinated to this new logic. (Zuboff, 2019, p. 97)

Zuboff primarily considers the realm of consumption in her analysis of Surveillance Capitalism, but it is also possible to apply this work to the behavioural surplus acquired in the workplace. Surveillance produces streams of data which can be combined with other data pools and resources to produce (through machine learning) insights into aspects of human labour that could not be gained by a single observation alone. Owners of this data (who might not be the employer who uses the technology) can create new ways of understanding the mechanisms of worker productivity and the ‘nudges’ by which the labour power of workers can be enhanced. These can be combined with AI knowledge of other entities in the production process to specify minute interactions between those entities to optimise production. This is what Zuboff (2019, p. 97) refers to as the ‘Behavioural Reinvestment Cycle', whereby behaviour is used to build platforms that are reintegrated into the production process to further optimise worker behaviour. One existing example of this is the use of so-called ‘fatigue functions’ to optimise human performance in production. A ‘fatigue function’ is a mathematical equation derived from empirical observation which shows when a human worker is reaching the point of ‘failure’ in terms of being unable to carry on with their task successfully. At present fatigue functions are usually determined by using existing data on worker fatigue so that a production process can be optimised. Studies which have tested worker fatigue in real manufacturing environments under experimentally controlled conditions can be used to specify how workers should behave in reality. With the advent of consistently gathered biometric and behavioural data on workers in real time, fatigue can be measured consistently, and the worker is consistently experimented on by AI that can ‘nudge’ workers towards better performance. The accumulation of intelligence through surveillance on each individual worker is reinvested constantly into a superior system.

It must be noted that the idea of an intelligence that can catalogue and build a grammar of individual skills and capacities to be used in the workplace is not a new one. The early years of the Soviet Union produced a number of experiments in creating a catalogue of human skills and abilities, with their origins in the work of Alexi Gastev. Gastev sought to record and catalogue all manifestations of physical labour (Ings, 2016, p. 79) which could be combined in a ‘performance'. Through this manual cataloguing performances could be choreographed, and workers would learn through rehearsal to prepare for factory work. In the 1980s there were similar attempts in terms of CBET to create a universal database of competences that could be used for any occupation. Plans were made for a vast lexicon of computerised records which could be used to select exactly the right set of competences for a particular work task (Preston, 2017, p. 34). These early experiments foreshadow the contemporary situation where individual behaviours are under surveillance and disaggregated, but the essential difference is that learning is transferred from the worker to the AI, and that the real learning that takes place in the workplace [Page 649]is occurring at the level of machines rather than at the level of humans.

This evolution and confluence of workplace learning with AI and machine learning is increasingly making the prospect of ‘cloud-based’ services for skills more likely. Rather than individuals possessing knowledge of discrete skills, the organisation uses ‘Behavioural Value Reinvestment’ to create a consistently evolving learning platform regarding worker behaviour. However, there is no reason why this evolving knowledge of skills and abilities should remain at the level of the individual organisation. As is the case with other services which can be accessed by a digital organisation, there are plans for ‘skills clouds’ whereby employers of various types could ‘draw down’ the particular skills components that they require in their workplace. For example, Workday, a NASDAQ-listed company with a market capitalisation of $40 billion, has produced a ‘skills cloud’ system that uses machine learning to categorise skills between organisations in order to form a common ‘skills language':

Cristina Goldt, vice president, HCM products, Workday commented: ‘Nearly every organization wants to develop and reskill their workforce to grow their people and their business, but they lack a fundamental understanding of the skills they have and the skills they need. Our skills cloud tackles this issue head on with machine learning algorithms that bring calm to the chaotic language of skills. This will ultimately help customers connect skills to people in a more meaningful way to improve how they get work done, develop existing workers, and allocate talent to better meet evolving business needs. (Source: www.enterprisetimes.co.uk/2018/10/03/workday-unveil-skills-cloud/)

The capacity for ‘skills clouds’ to grow is not only premised on technology but also on the growth of new forms of precarious employment. Recruitment agencies, who often act to ‘sift’ employees to large employers make use of skills tests, using AI and machine learning, to filter workers into job positions and in doing so gain wider behavioural knowledge of worker skills and abilities. Similarly, the growth of ‘platform capitalism’ in terms of employers who use mobile applications to track and reward workers (such as Uber or Deliveroo) gain constant data on employee behaviour and skills. This leads to a number of separate ‘skills clouds', with the possibility of amalgamation at a higher level. The implication of this for learning at work is clear in that learning is disappearing not just from workers, but potentially also from employers as it is integrated into the ‘skills cloud’ by multinational companies.

#### Extinction – inevitable mass migration, governments lose authority and consent, economic collapse, global war, a debt crsis, fascism, populism, nationalism, and militarism are all exacerbated by techno-capitalism

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To say the present era is one of crisis borders on cliché. Habitual and familiar, this crisis differs from the dystopias of George Orwell or Aldous Huxley, or hell in the paintings of Bosch or the last days of Earth as told in the Book of Revelations. It is unlike Europe during the Black Death or Central Asia as it faced the galloping Golden Horde. Here, instead, we inhabit a world in free-fall and yet we are all along for the ride. Some aspects of this, like the European migration crisis, are highly mediatised and public. Here, people displaced by war and social breakdown migrate, often meeting with hostility in response. While for previous generations the Berlin Wall was totemic of division, only 235 people died trying to cross it. Compare that to the 3,770 souls who died or went missing in the Mediterranean trying to reach the shores of Europe just in 2015. And if, as an undocumented migrant, you are fortunate enough to safely cross the Mediterranean, or the US–Mexico border, or the fences and forests between Hungary and Bulgaria, your problems are only just beginning. There are of course other expressions of our broken world that are equally profound, if less immediately obvious. One is a crisis of mental health, with suicide the leading killer of British men under the age of fifty and depression expected to be the leading cause of the global burden of disease by 2030. Others still are less easy to personalise, remaining incomprehensible on a human scale. One is a crisis of the state, as agency ebbs to the market and an increasingly globalized economy undermines the ability of nations to act decisively. This process of market and capital integration – where commodities move more seamlessly than ever – is entirely at odds with the experience of displaced peoples and undocumented migrants as they face walls, surveillance and ever more securitised borders. As the state gives way to the market this is accompanied by a nebulous sense of loss, as a crisis of representation empties democratic institutions of authority and citizens come to view them as little more than conduits for the interests of corrupt elites. This entrenches the tendencies of globalisation as previous, if imperfect, repositories of accountability – national governments – lose the consent of those they represent. In the supposedly good times something had gone badly wrong – but it remained an undercurrent.

Almost two decades after Fukuyama’s false prophecy, that decisively changed: a banking crisis, a debt crisis, a deficit crisis – all culminating in the imposition of austerity, from Greece to California. Alongside that was war in Georgia, the flowering of the Arab Spring, uprising in the Ukraine, insurrection – and then the most bloody of civil wars – in Syria. Elsewhere previously low-intensity conflict in Iraq and Afghanistan deteriorated further, soon joined by similarly hazy struggles in Libya and Yemen. In early 2014 the Russian Federation added new territory for the first time as it annexed Crimea following a local referendum. A few months later, straddling Syria and Iraq in an area the size of the United Kingdom, insurgents declared a caliphate, the Islamic State. But even amid all this it was events in Western Europe, a heartland of capitalist realism, which proved most surprising: a heightened cycle of protest and riot in England after 2010 was followed by a failed but surprisingly close referendum on Scottish independence four years later. Even that paled into insignificance, however, when in 2016 Britain voted to leave the European Union, becoming the first member-state in its history to do so. While ‘Brexit’ was the most important political moment in Europe for a generation, it was soon outdone by events across the Atlantic when, just a few months later, Donald Trump was elected the forty-fifth president of the United States. Less than a decade after the collapse of Lehman Brothers in 2008, it was now undeniable. An expansionist Russia, isolationist Britain and broken economic model had all been outdone by a reality TV star becoming the most powerful person on Earth. History was back. Trump’s inauguration speech the following February stood in defiant contrast to the heady rhetoric of his predecessor, Barack Obama, when he assumed office eight years earlier. Claiming that the system was failing ordinary Americans, Trump’s explicit message of social decay and aggrieved nationalism became his immediate signature in office. And yet in a strange way, despite their markedly different forms of presentation, Obama and Trump shared a similar faith in the unique ability of markets to find solutions. After all, anything else is tantamount to heresy in a world of capitalist realism – where the end of the world is more plausible than the end of capitalism. This condition presents arguably the most pressing crisis of all: an absence of collective imagination. It is as if all humanity has been afflicted by a psychological complex, capitalist realism making us believe the present world is stronger than our capacity to remake it – as if it were not our ancestors who created what stands before us now. As if the very essence of humanity, if there is such a thing, is not to constantly build new worlds. In its defence, capitalism can point to an impressive record, at least so far. Having faced crises almost every decade for two centuries, amid the ferocious pace of constantly accelerating change, it has always found ways of extracting profit and, eventually, improving living standards. Capitalism has survived, evolved and prospered through the Industrial Revolution, the Great Depression, protectionism, two World Wars, the end of the gold standard and the demise of the Bretton Woods Agreement. Little more than a generation ago, much of the world was under the political influence of the former Soviet Union, with it and the United States seemingly destined to face off in nuclear confrontation. And yet that never came to pass and, as Fukuyama would later write, a divided world was replaced by one where markets prevailed and liberal democracy would reign supreme. This explains why, in spite of manifest crises, those who champion the status quo are as confident as they are. Ours may well be a world of low growth, declining living standards and rising geopolitical tensions, but capitalism’s staunchest advocates draw strength from knowing similar problems have been dealt with before.

#### The alternative is fully automated luxury communism – coopting the machinery of efficient production to create sustainable automated machine unemployment

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Why ‘fully automated luxury communism’? Why those words and in that sequence? After all, many see communism as nothing more than a failed experiment of the twentieth century undeserving of our attention save learning from its mistakes. Some may admit that capitalism has numerous flaws, and may indeed end one day, but if communism is what comes next, that wouldn’t be an improvement. While it is true that a number of political projects have labelled themselves communist over the last century, the aspiration was neither accurate nor – as we will go on to see – technologically possible. ‘Communism’ is used here for the benefit of precision; the intention being to denote a society in which work is eliminated, scarcity replaced by abundance and where labour and leisure blend into one another. Given the possibilities arising from the Third Disruption, with the emergence of extreme supply in information, labour, energy and resources, it should be viewed not only as an idea adequate to our time but impossible before now. FALC does not underpin the trends of the Third Disruption – it is their conclusion. If we want it. However people respond to the word ‘communism’, the word is associated with one person in particular – Karl Marx. It was he who claimed to see the contours of a new world at the precise moment industrial capitalism burned at its brightest. That is not to say Marx was unique in thinking capitalism would end, nor that it would transition to something else. Indeed in this respect he was joined by, among others, two thinkers of the twentieth century, John Maynard Keynes and Peter Drucker, who despite being critics of his held similar views on how capitalism might lead to a system beyond it. By placing Marx alongside both thinkers, examining how each viewed the relationship of scarcity to capitalism and utopia, we can begin to create a clearer picture of what he meant by communism. An aspect of Marx’s thinking which remains underemphasised is how he recognised capitalism’s tendency to progressively replace labour – animal and human, physical and cognitive – with machines. In a system replete with contradictions, it was this one in particular which rendered it a force of potential liberation. This is most clearly laid out in the ‘Fragment on Machines’, a short but important excerpt within the much larger Grundrisse. The reason you’ve likely never heard of either before, unlike the better-known Communist Manifesto or Capital, is that the Grundrisse was unpublished in German until 1939. Worse still, the text wasn’t translated into English until 1973. As a result, its prescient observations exerted little influence over communist projects in the twentieth century. That was a tragedy, because within the Grundrisse we not only encounter the first analysis of technological evolution under capitalism, but also the opportunities that creates. As Marx so memorably put it in the ‘Fragment’, Capital employs machinery, rather, only to the extent that it enables the worker to work a larger part of his time for capital, to relate to a larger part of his time as time which does not belong to him, to work longer for another. Through this process, the amount of labour necessary for the production of a given object is indeed reduced to a minimum, but only in order to realise a maximum of labour in the maximum number of such objects. The first aspect is important, because capital here – quite unintentionally – reduces human labour … to a minimum. This will redound to the benefit of emancipated labour, and is the condition of its emancipation. Marx could not have been any clearer: competition compels capitalists to innovate in production. This leads to permanent experimentation with workflows and technologies, all in the pursuit of ever-greater efficiency. The logic of market demand means capitalists must produce goods and services as cheaply as they can, forcing them to constantly reduce overheads, in turn creating a never-ending cycle of automation, encompassing tasks and even whole jobs – substituting workers with machines. While generating huge amounts of suffering and exploitation under capitalism, under another system this represented a momentous opportunity. In 1987 the US National Academy of Sciences published a report titled Technology and Unemployment. In it, restated almost word for word, is Marx’s criticism of technological change under capitalism, the key difference being the report’s authors consider such change to be wholly positive: Historically and, we believe, for the foreseeable future, reductions in labour requirements per unit of output resulting from new process technologies have been and will be outweighed by the beneficial employment effects of the expansion in total output that generally occurs. So while production becomes ever more efficient, and leisure is valued as a social good, increased productivity doesn’t lead to more free time but simply the production of more goods and services. In fairness to those defending it, such a view was not only founded on economic orthodoxy but also two centuries of observable change under capitalism. The difference with Marx in the Grundrisse is he thought there was an alternative, and that only in pursuing it could humans achieve freedom.

While the average political commentator likes to cast Marx as an idealistic dreamer, the man himself repeatedly stated his distaste for describing what communism might actually look like – what he termed writing ‘recipes for the cook-shops of the future ’. While admirable in its humility, that is also irritating because one of the greatest minds to describe the shortcomings of the emerging system was well placed to at least suggest what might replace it. Marx’s view, however, was that workers in struggle were uniquely positioned to arrive at concrete solutions. He was certain about some features of the new society, however. One was that the arrival of communism would herald the end of any distinction between labour and leisure. More fundamentally, it would signal humanity’s exit from what he called the ‘realm of necessity’ and entrance into the ‘realm of freedom’. But what did that mean? For Marx the realm of necessity was where we ‘wrestle with nature to satisfy our wants and to maintain and reproduce life’ – in other words it was a world defined by scarcity, something which had confronted us since the time of our hominid ancestors. In Marx’s day it formed the central question of classical political economy: how do you efficiently and equitably allocate resources in a world where they are limited? For Marx the realm of necessity was so far-reaching that it even included socialism. That was because, like capitalism, it had features such as work and scarcity – although as a system subject to democratic control these were rationalised and more socially just. While certainly preferable to capitalism, and something to be actively struggled for, socialism for Marx was a stepping stone to something else: communism and the realm of freedom. This, by contrast, was marked not only by an absence of economic conflict and work but by a spontaneous abundance similar to the Golden Age of Hesiod or Telecleides, or the biblical Eden. Unlike in classical Greek poetry or religious scripture, however, for Marx this was a project to be aimed at rather than a legendary past to be revered. A realm of plenty beyond imagination wasn’t something to recall or enjoy in the afterlife – it was a political project to aim for in the here and now. It was communism. Despite the claim that Marx favoured violent revolution, the truth is he never believed the transition beyond capitalism would be an exclusively political process – something so simple to achieve as to merely require replacing one group of rulers with another. It certainly entailed class struggle and the working class gaining political power, but it also needed new ideas, technologies and social relations. Marx considered the working class to be the key to a future society, but only because its revolution was uniquely able to eliminate work and thereby end all class distinctions. Thus despite repeated calls for the working class to liberate itself, Marx did not believe that work makes us free – nor that the society of work expands the scope of human possibility. To the contrary, his view was that communism was only possible when our labour – how we mix our cognitive and physical efforts with the world – becomes a route to self-development rather than a means of survival. Marx viewed this as contingent on technological change: the more developed the forces of production, the greater their capacity to offer a new kind of society where labour and leisure would blend into one: In a higher phase of communist society, after the enslaving subordination of the individual to the division of labour, and therewith also the antithesis between mental and physical labour, has vanished; after labour has become not only a means of life but life’s prime want … and all the springs of co-operative wealth flow more abundantly – only then can the narrow horizon of bourgeois right be crossed in its entirety and society inscribe on its banners: From each according to his ability, to each according to his needs! With the arrival of communism any distinction between mental and physical labour would vanish, with work becoming more akin to play. This also meant a society with greater collective wealth, where all essential wants as well as creative desires are satisfied. Which is where luxury comes in. The concept, under conditions of scarcity, expresses that which is beyond utility, its essence an excess beyond the necessary. So as information, labour, energy and resources become permanently cheaper – and work and the limits of the old world are left behind – it turns out we don’t just satisfy all of our needs, but dissolve any boundary between the useful and the beautiful. Communism is luxurious – or it isn’t communism.

### 2NC – Framework

#### Err neg – you have an inherent bias against anti-capitalism – if you don’t refuse their knowledge society will collapse into a capitalist-authoritarian that refuses progress and justifies atrocities with backward logic

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Capitalist realism is best summed up with a single sentence: ‘It is easier to imagine the end of the world than the end of capitalism.’\* For Mark Fisher – the British theorist who coined the term – that catchphrase captures the very essence of our era, with capitalism not only viewed as the exclusively ‘viable political and economic system’ but also one where it is ‘impossible even to imagine a coherent alternative ’. After all, how can you contrive an alternative to reality itself? Turning to the 2006 film Children of Men, Fisher investigates its surreal normality as a dystopia fit for our age with the world it projects ‘more like an extrapolation or exacerbation of ours (rather) than an alternative to it. In its world, as in ours, ultra-authoritarianism and Capital are by no means incompatible: internment camps and franchise coffee bars co-exist.’ This tallies with the thinking of Alain Badiou, who writes, We live in a contradiction … where all existence … is presented to us as ideal. To justify their conservatism, the partisans of the established order cannot really call it ideal or wonderful. So instead, they have decided to say that all the rest is horrible … our democracy is not perfect. But it’s better than the bloody dictatorships. Capitalism is unjust. But it’s not criminal like Stalinism. We let millions of Africans die of AIDS, but we don’t make racist nationalist declarations like Milosevic. Because capitalist realism has no offer of a better future – especially so over the course of the last decade – its default logic is one of anti-utopianism. Flat wages, falling home ownership and a warming planet might be bad, granted, but at least we have iPhones. And, yes, you may not be able to access the things your parents took for granted, like affordable homes or free higher education, but you should still be grateful – at least it’s not the sixteenth century. Over time this argument, seductive for the opening years of the twenty-first century, is being revealed as patently absurd. Capitalist realism, a world where nothing really changes, is giving way to a historic moment defined by crisis. One where, unless we transform our understanding of the future once more, the very worst demons of centuries past will prevail.

### 2NC – Links

#### **The enhancement of humankind will exacerbate inequalities and create new ones.**

Swindells 14 (Fox Swindells, "View of Economic Inequality and Human Enhancement Technology", No Publication, https://www.humanamente.eu/index.php/HM/article/view/123/105, 5-2022, Accessed 7-5-2022)//ILake-SG \*\*note: HET stands for Human Enhancement Technology.

The expected inequality of access to HET will exacerbate existing economic inequalities if left unregulated. The wealthy already benefit from their financial situation; for example they can use their position to access better education and nutrition, which in turn enhances their brain power (Sahakian &Morein-Zamir, 2007, p. 1159). HET has the potential to allow those who can afford it to increase, through the use of genetic modification technology, their own, and their children’s, IQ beyond even that of the most gifted naturally. Cognitive enhancements, such as education, have many benefits beyond higher job status and salary; they can reduce the risk of substance abuse, crime, and many illnesses while increasing quality of life, social connectedness, and political participation (Sandberg &Bostrom, 2007, p. 208). Consequently, the benefits associated with higher IQ, such as increased income (Sandberg &Bostrom, 2007, p. 216), and prevention of a wide array of social and economic misfortunes (Bostrom &Sandberg, 2009, p. 330), are likely to increasingly become solely available to those who are better-off, further increasing the advantages packaged with wealth. This will exacerbate economic inequality by providing further benefits to those with the ability to pay and preventing access for the less well-off. Fukuyama (2002, p. 9-10) is concerned that the idea of natural human equality, that is the base of political and moral equality, will be compromised by HET and consequently some people, the unenhanced, will be considered less human than the enhanced. HET has the potential to create two classes of people, the enhanced and the unenhanced, and this would increase class struggle; a solid immovable hierarchy would form where, based on ability to pay, some people would be significantly better off than others who would never have the ability to catch up as they lack class mobility. There is concern that those able to afford HET will be buying their own well-being at the expense of a greater social good (Caplan &Elliott, 2004, p. 174). There is fear that the way we live together as a group could be damaged by the actions of individuals. Harms from inequality do not require extreme deprivations to warrant our consideration; injustices exist even when no extreme deprivation is present. If a HET increased political influence for those who could afford it, such as by allowing increased communication capacities, this would be an injustice to those who did not have access to it although they suffer no extreme deprivation (Buchanan, 2011b, p. 250). We must seriously consider these potential harms from increased inequality and create policies to best mitigate these harms. Studies have found a wide range of negative outcomes both within and between nations with greater inequality, these include; greater risk of mental disability and psychiatric hospitalization (Hudson, 2005, p. 16); lower economic mobility (Andrews &Leigh, 2009, p. 1492); poorer general health; higher infant mortality; lower average life expectancy; increased obesity; greater illicit drug use; higher homicide and violent crime; a greater prevalence of depression; and, lower self-reported well-being (De Vries, Gosling&Potter, 2011, p. 1978). These numerous social problems are more common in unequal societies, for everyone in the society, not just the less well-off (Wilkinson &Pickett, 2007, p, 1972).In a society with a strong hierarchy, an individual’s position relative to others is more important, and, consequently, individuals become more competitive, less trusting, more self-focused, less friendly, and less cooperative (De Vries, Gosling, &Potter, 2011, p. 1979). This means more unequal societies have lower levels of agreeableness and, following from this, poor health outcomes, such as poor diet, and increased alcohol and cigarette consumption (De Vries, Gosling, &Potter, 2011, p. 1984). Increased inequality, and the associated negative consequences, should be of concern to both the less and more well-off in society.

### 2NC – Sustainability

#### Capitalism is collapsing now – its infinite growth wraps around to destroy itself with climate change, resource scarcity, societal aging, global poverty, and technological unemployment – extinction is inevitable in the squo

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But besides those issues are challenges seemingly harder to overcome. In isolation each is historically significant, yet taken together they can be viewed as threats whose scale is civilisational, holding the potential to undermine the ability of capitalism to reproduce itself as a system based on infinite growth, production for profit and wage-labour. There are five such crises, which at times overlap. They are climate change and the consequences of global warming; resource scarcity – particularly for energy, minerals and fresh water; societal ageing, as life expectancy increases and birth rates concurrently fall; a growing surplus of global poor who form an ever-larger ‘unnecessariat’; and, perhaps most critically, a new machine age which will herald ever-greater technological unemployment as progressively more physical and cognitive labour is performed by machines, rather than humans. Confronting such crises is the basis of FALC. Capitalism, at least as we know it, is about to end. What matters is what comes next.

The claim that capitalism will end, is, for capitalist realism, like saying a triangle doesn’t have three sides or that the law of gravity no longer applies while an apple falls from a tree. Rather than understanding the present as one historical period among many, like Victorian England or the Roman Republic, to be alive at the end of history means presuming our social systems to be as unchanging as the physical laws that govern the universe. And yet the truth is capitalist realism is already coming apart. The fact you are reading these words at all is proof. Despite the observations of Francis Fukuyama and his disciples, history returned on 15 September 2008 when the global financial system crashed. Within weeks the world’s leading economic powers, previous zealots for minimal state interference, were left with no alternative but to bail out their domestic banks, with some even being nationalised. That exposed their previous free market fervour for the lie it was: this was socialism for the rich and market capitalism for the rest. The critics had always said as much, now nobody could deny it. But as well as revealing what had passed as common sense for the political project it was, that moment also ended a phase of global expansion that had powered financial services and real estate – most notably in Britain and the United States – to the forefront of economic life. Over the preceding two decades it was these areas which had underpinned growth, tax receipts and forms of asset ownership which were at least moderately distributed. After 2008 that decisively changed, meaning that in many countries poverty has increased, wages have stagnated and growth – in any significant sense – has vanished. In the US the Supplemental Nutrition Assistance Program, popularly known as ‘food stamps’, is a federal initiative that helps low-income Americans buy food. By virtue of its objective it is one of the most accurate indicators of poverty in the country. While in 2007, immediately before the crisis, 26 million Americans were in receipt of food stamps, by 2012 – at the tail end of what some now call ‘the Great Recession’ – that figure had almost doubled to 46 million. Over subsequent years, despite an alleged upturn in the country’s economic fortunes, that number barely moved, with Donald Trump frequently highlighting how 43 million Americans used food stamps while on the campaign trail in 2016. For all the talk of his victory being powered by ‘fake news’, that number was entirely accurate. Analogous to food stamp use in the US is the meteoric rise in the number of people using food banks in Britain. The Trussell Trust, which operates the largest food bank network in the country, claims to have delivered around 41,000 food packs in 2010. By 2017 that had risen to 1.2 million after nine consecutive years of rising demand for their services. While the increased use of food banks in the UK is partially the result of disastrous welfare reforms, it also reflects something observable on both sides of the Atlantic: being in work no longer guarantees escaping poverty – quite the opposite. The most detailed data available in the UK only serves to confirm a historic shift has taken place over the last decade, with those in relative poverty more likely to be in a working household than not. Most troubling of all is that this is accelerating: by the end of 2016, 55 per cent of people in poverty were in a household where someone was employed – an astonishing 7.4 million people. Just six months later that figure had risen to 60 per cent. Powering this downward spiral is falling wages: since 2008, real pay in Britain, which takes inflation into account, has dropped by more than 10 per cent. It should come as little surprise, then, that nearly 17 million Brits of working age have less than £100 in personal savings. In the United States it’s a similar story, with 63 per cent of Americans saying they have $500 or less put aside. The other pillar of consent for twentieth-century capitalism, of property-ownership as the complement to democracy, is in similar retreat. In Britain, where the Conservative Noel Skelton coined the term ‘property-owning democracy’ in 1923, home-ownership is at its lowest level since 1985 and continues to fall. It’s even worse in the US, though, where a combination of high prices, low wages and little credit means the average American is less likely to own their own home than at any time since 1965 – four years before the Moon landing.

While ordinary people are struggling, measured through use of food banks and food stamps, wages which buy less or unmet expectations regarding home ownership, the abstract vision of the economy pedalled by elites, defined by growth and productivity, is in similar disarray. After all, on output per hour worked, perhaps the most useful measure of economic progress, Britain produced less in 2017 than it did a decade earlier. Such a development is without precedent in modern history. Similar issues are in evidence elsewhere around the world. ‘Lost decade’, previously used to describe anomalous economic conditions in countries like Italy and Japan, is increasingly applied to an ever-growing cluster of nations. Since the crisis of 2008, Greece and Spain have seen unemployment go beyond 25 per cent, with youth unemployment touching double that. Elsewhere, economies such as Hungary, Austria, Portugal and Latvia’s are no bigger now than they were in 2008 when measured on an output-per-person basis. Even in the rising nations of the Global South, the trend is clear. The 10 per cent growth which characterised the Chinese and Indian economies during the early years of the twentyfirst century are now a thing of the past. Elsewhere the likes of Brazil and Russia have been mired in recession almost as severe as parts of Europe, the only difference being their economic malaise has kicked in at far lower levels of relative development. Such a shift has only served to strengthen the forces of autocracy. So our world is one increasingly defined by low growth, low productivity and low wages. Before the crisis, most policymakers would have thought such events impossible, let alone speculated about an appropriate response. Alan Greenspan’s 2008 remarks to the US House of Representatives are illustrative: the banking crisis having left this former chairman of the Federal Reserve in a state of ‘shocked disbelief ’ and ‘distressed’ by events he previously viewed as impossible. While neoliberalism, which emerged with the Thatcher and Reagan governments, led to higher unemployment and lower wage growth, for more than a generation this was mitigated by access to cheaper goods and services – by relocating production to countries with lower wages – as well as inflated asset prices, particularly housing, and access to cheap mortgage and consumer debt. As well as forming the foundation for a widely felt material improvement in living standards, this was the economic base for a world where there was no alternative. How could you really be angry at anything with your credit cards and ever-cheaper consumer gadgets? And even if you were, what choice did you have once you’d earned your stake in the system with a home of your own? Now, with these previous fixtures in retreat, elites have yet to make a positive offer about what comes next. What we know for certain is that the status quo can’t hold. There is no consent for a system which, on nearly every measure, is going backwards. This all explains the revival of radical politics, on both the left and right, in recent years. Because the events of 2008 came as such a shock – even for the system’s outsiders – nobody proved immediately able to take advantage of such a historic opportunity. Gradually that would change, however, with the previously unthinkable becoming increasingly commonplace. In the 2009 European Parliamentary elections, the far right made impressive gains across the continent with the likes of UKIP, France ’s Front National and even the British National Party attracting widespread support. The BNP’s results in particular came as a shock, with a party historically connected to the country’s neo-Nazi movement gaining almost 1 million votes and two MEPs. For a few years similar energies on the left were limited to the streets – such as the 2010 British student movement and the Spanish Indignados – but eventually these too translated to success at the ballot box. Spain offered the most obvious initial expression of that with the emergence of a new party, Podemos, which gained five MEPs in 2014 just a few months after it had been formed, before finishing third in the following year’s Spanish general election. But before then, in January 2015, Greece’s Syriza, a coalition of previously insignificant left-wing groups, would win the most seats in that country’s general election. After agreeing to be the senior partner in a wider coalition they formed a government, becoming the first party of the radical left to do so in a Western democracy since the Second World War. This fed hopes of a deal between Greece and the ‘Troika’ of the European Commission, European Central Bank and the International Monetary Fund on the terms of their coming bailout deal that summer. In due course Syriza campaigned for an ‘Oxi’ vote, defying the conditions proposed by the Troika. To widespread amazement, oxi – no in Greek – won by a landslide. While the Troika would refuse to change their stance in the negotiations that followed, and the Greek government capitulated to their terms, a new reality had emerged: the corridors of power were no longer insulated from mass protest in the streets. In Britain, meanwhile, the Conservative Party won its first majority since 1992 as the right-wing UKIP attracted almost 4 million votes and the Scottish National Party took an astonishing forty seats from Labour in Scotland. A few months later, Jeremy Corbyn, who began his outsider bid at odds of 200–1, became Leader of the Labour Party – his supporters certain he could be powered by the same wave that had taken the likes of Syriza and Podemos so far in such a short space of time. It was 2016 which proved to be the decisive year, however, as a crisis that started eight years earlier found its most potent political expressions. In June, Britain voted to leave the European Union with more people voting in the ‘Brexit’ referendum than any previous vote held in the country. That appeared to be a pivotal moment, with right-wing populism seeming to capture an increasingly clear hostility to governing elites. As Nigel Farage, a figurehead for the Brexit movement, triumphantly declared on the night, ‘This is a victory for ordinary people, for good people, for decent people … the people who’ve had enough of the merchant bankers.’ Yet even the shock of Brexit paled in comparison to events just a few months later when Donald Trump, a well-known businessman and reality TV star, was elected president of the United States. Winning the Republican primary earlier that year had already caused a shock – and with Bernie Sanders pushing Hillary Clinton close for the Democratic nomination, the signs were there for an upset. Which was precisely what ensued as Trump took previously democrat-held ‘Rust Belt’ states on his way to the White House. The President-elect’s victory speech was reminiscent of Farage ’s, as he told ‘the forgotten men and women of our country’ that they would be ‘forgotten no longer’. The following April, buoyed by the perception of a zeitgeist seemingly to her advantage, Britain’s new Prime Minister Theresa May called a general election to cement her party’s grip on power. An enhanced majority was widely viewed as inevitable, the question being how big a landslide the Conservatives could achieve. And yet, in a manner analogous to both Trump and Brexit, Labour defied the odds with a clear message of a break with the status quo. While they didn’t form a government, they did deprive the Tories of a majority, winning an additional 3.5 million votes in the process and enjoying the biggest increase in vote share – for any party – since 1945. The Tories, significantly to the right of their campaigns in recent years also did well, winning their highest share of the vote since 1987. Britain now displayed both key features of the new political landscape: massively increased polarisation, and uncertainty as to whether the politics of the left or right would ultimately prevail. While they might not share much politically, Trump and Corbyn, along with Brexit and the emergence of Podemos, Bernie Sanders and Syriza, indicate the era of capitalist realism is over. And yet there is also a deeper story at play, one which remains largely unremarked upon. While the events of the last several years are both historic and unexpected, they are a response to an economic crisis, beginning in 2008, which itself only represents the first stage of a prolonged period of global disorder. Over coming decades we will not only endure the aftershocks of the failure of this economic model to deliver rising living standards, but also the era-defining effects of the aforementioned five crises. Individually, each poses an existential threat to our way of life. Together they could blow away the social and economic certainties of the last two and a half centuries. But there is a deeper layer still, because we are at a crossroads as much as a cliff edge. Alongside these challenges we also see the contours of something new, a society as distinct from our own as that of the twentieth century to feudalism, or urban civilisation from the life of the hunter-gatherer. It builds on technologies whose development has been accelerating for decades which, only now, are set to undermine the key features of everything we had previously presumed to be as unchanging as scarcity itself. Its name? Fully automated luxury communism.

### 2NC – Alt

#### Deconstructing capitalist realism is enough to vote neg – it allows us to think beyond a world of capital.

**Bastani 19** (Aaron Bastani, co-founder and Senior Editor at Novara Media and has a doctorate from the University of London. His research interests include new media, social movements and political economy. He has written for Vice, the Guardian, the London Review of Books and the New York Times and regularly appears as a commentator on the BBC and Sky News. Verso Publications, "Fully Automated Luxury Communism", 2019, https://law.unimelb.edu.au/\_\_data/assets/pdf\_file/0009/3445353/2.-aaron-bastani-fully-automated-luxury-communism-a-manifesto-2.pdf, pg 242-243, accessed on 6/28/2022)//gideon

FALC Is a Beginning, Not a Destination The shifts outlined as central to the Third Disruption are not a destination, but a beginning. FALC is not a blueprint for a steady-state Eden – those always prove disappointing anyway. Nor is it a place beyond sadness or pain, where conflict and vulnerability are consigned to the past. Pride, greed and envy will abide as long as we do, the management of discord between humans – the essence of politics – an inevitable feature of any society we share with one another. Instead, FALC is a figurehead of possibility forged for a world changing so rapidly that new utopias are needed – because the old ones no longer make sense. Isaac Deutscher once wrote ‘socialism is not evolution’s last and perfect product or the end of history, but in a sense only the beginning’. This is how FALC is perhaps best conceived. It is a map by which we escape the labyrinth of scarcity and a society built on jobs; the platform from which we can begin to answer the most difficult question of all, of what it means, as Keynes once put it, to live ‘wisely and agreeably and well’. Of course, any effective map must instruct its user about immediate next steps, the clarity of which must be as apparent as the intended destination. It is for this reason that FALC demurs from idealism or an overly optimistic view of human nature, offering immediate action instead. While FALC is situated within a transformation as seismic as that of the arrival of agriculture, its concrete politics consist in specific, readily identifiable demands: a break with neoliberalism, a shift towards worker-owned production, a state-financed transition to renewable energy and universal services – rightly identified as human rights – placed beyond commodity exchange and profit. FALC is not a manifesto for the starry-eyed poets. Rather it is born from the recognition of an increasingly obvious truth: amid the changes of the Third Disruption the ‘fact’ of scarcity is moving from inevitable certainty to political imposition. This is not a book about the future but about a present that goes unacknowledged. The outline of a world immeasurably better than our own, more equal, prosperous, and creative, is there to see if only we dare to look. But insight alone is not enough. We must have the courage – for that is what is required – to argue, persuade, and build. There is a world to win.

### 2NC – AT: Perm

#### The perm fails

**Beckett 19** (Andy Beckett, a British journalist and historian. He writes for The Guardian, the London Review of Books and The New York Times magazine. He studied Modern History at Balliol College, Oxford, and journalism at the University of California, Berkeley. The Guardian, "Fully Automated Luxury Communism by Aaron Bastani – a manifesto for the future", 5/29/2019, https://www.theguardian.com/books/2019/may/29/fully-automated-luxury-communism-aaron-bastani-review, accessed on 6/29/2022)//gideon

Yet sometimes the nimbler Bastani persona lightens these pages. A clever passage uses the London “Horse Manure Crisis” of 1894, when the then huge number of horses being used in the capital led the Times to wonder whether it would become uninhabitable, to demonstrate that supposedly lethal threats to the environment can be overcome by technology with unexpected swiftness. Within a few years of the panic, motorised transport became common, the London horse population collapsed, and the threat of manure-buried streets evaporated. “A few short decades from now,” Bastani concludes, “the seemingly terminal [environmental] problems of today will appear as absurd.” You don’t have to share his confidence about that to agree with his suggestion that the apocalyptic is a mode that the media and many of its consumers slip into too easily – sometimes for commercial or psychological rather than rational reasons – and that episodes of mistaken doom-mongering are too easily forgotten. But he does concede that there is a bigger obstacle than pessimism, or “technical barriers”, to the creation of a sustainable and fair world. The problem is political: the stranglehold of short-termist corporations over most economic life and governments. It’s a predictable bogeyman for a book of this sort, but a persuasive one. As long as such capitalists dominate the development and deployment of technology, he argues, its potential to achieve higher social and environmental goals will not be realised. Even the most adventurous space exploration firms, which he at first profiles with great enthusiasm, are ultimately too unambitious and profit-driven for his liking. In his final chapters, Bastani sketches how governments and citizens could make companies act differently, and also expand the space for developing technology outside capitalism altogether. He suggests that Corbyn’s Labour party, and in particular the shadow chancellor John McDonnell and his technologically literate young advisers and proteges, are on the right path. But it’s a long haul from “growing the worker-owned economy” and establishing new British “regional investment bodies”, as the book slightly blandly summarises the McDonnell approach, to establishing the new global society Bastani envisages, with almost limitless public services and consumer commodities, all of them either free or affordable to all, and environmentally sustainable.

## K – Colonialism

### 1NC – Colonialism Links

#### Globalization of biotechnology is a continuation of epistemologies of Western control that violates other nation’s sovereignty

Carolan 7 (Michael S. Carolan, "Mapping Biotechnology: From Epistemic Artifacts to Geographies of Control”, https://www.jstor.org/stable/43304100, Autumn 2007, Accessed 6-26-2022)//ILake-SG

Questions of sovereignty and distributive rights become par- ticularly pronounced when one recognizes the globalization of Western patent law. Such a move began to gather steam in the 1 980s with the emergence of the Uruguay Rounds. This represents a watershed moment of sorts, ushered in largely by developed countries, which ultimately led to the "harmonization" of interna- tional patent law. Serious concerns began to emerge in the 1 980s within the U.S. business community and government regarding lost revenues from the piracy of U.S. technologies overseas. According to a 1987 survey conducted by the U.S. International Trade Com- mission, U.S. firms were losing approximately US$50 billion a year from a lack of overseas intellectual property protection (Adede 2003). What was needed, it was argued, was the uniform adoption of strict intellectual property rights by all members of the interna- tional community. This code of uniform global standards as they apply to patent law was first defined with the ratification of the Convention on Biological Diversity in 1 992, followed shortly there- after with the General Agreement on Tariffs and Trade (CATT)'s Trade-Related Aspects of Intellectual Property Rights (TRIPS) in 1994. Yet, whose vision of patent law was to be "harmonized" the world over through such global agreements? The answer: Anglo- North American patent law (Alford 1995). Thus, while the creation of a uniform global standard for intellectual property protection might initially sound reasonable (particularly among those located in developed countries), there is a growing concern that interna- tional agreements like TRIPS are little more than "an international copyright grab by United States intellectual property industries" (Aoki 1996: 1341). During TRIPS negotiations, for example, a number of African countries argued that it was inherently unethical to patent life forms (Adede 2003). Similarly, many Asian countries protested on the grounds that U.S. patent law clashed with their own cultural tradi- tions, which consider intellectual works a communal good and copying an essential means to disseminate knowledge and promote learning. Indeed, because of this, the patent laws of India, Korea, and Thailand did not extend to pharmaceutical products, whereas in India such protections lasted only five years (Kuanpoth 2003). When examined historically, it is interesting how developed nations like the United States, the most ardent supporter of some type of global harmonization of patents, themselves denied protec- tion for foreign technology when they where still a young, devel- oping state. The United States, for example, ignored foreign copyrights until 1891 and maintained a manufacturing clause in its copyright law until 1986 that limited foreign copyright holders' rights for products produced within the United States (Alford 1 994). And the arguments used to justify these policies sound remarkably similar to those coming out of developing countries today.

#### **The development of internationally harmonized biotech patent law is a product of epistemologies of Western dominance that subjugates and erases Eastern countries.**

Carolan 7 (Michael S. Carolan, "Mapping Biotechnology: From Epistemic Artifacts to Geographies of Control”, https://www.jstor.org/stable/43304100, Autumn 2007, Accessed 6-26-2022)//ILake-SG

In 2006, South African law was amended to require applicants for patents to declare the source of origin of the material was well as whether the innovation draws from traditional knowledge or traditional uses. Yet, as the preceding examples make clear, such statutory requirements risk becoming irrelevant due to the growing list of technologies that can remove these artifacts from history. For through such processes as replication and synthesis, artifacts can now be created, at least from the perspective of internationally harmonized patent law, ex nihilo. When taken together, such artifacts, processes, and policies reinforce long-standing geographies of control and domination. This can be witnessed, for example, as one follows the changing spatial locations of biological material, from source, to centers of accumulation, to centers of manipulation. It is no secret how the origins of important crops sprinkle the globe, with a particular genetic richness found within the tropics and subtropics. The point that tremendous biodiversity tends to be centered within these warm, moist climates was famously documented by the Russian scientist Nikolai Ivanovich Vavilov in 1926 with the publication of Origin and Geography of Cultivated Plants. Vet, although the origin of biological materials is concentrated in less developed countries, a noticeable redistribution takes place as these artifacts are reduced into mobile, stable forms and collected and stored. For example, the 12 largest gene banks are located in the mostly developed countries of (listed in alphabetical order) Brazil, Canada, China, France, Germany, India, Japan, Korean Republic, Russia, Ukraine, the United Kingdom, and the United States (Food and Agriculture Association of the United Nations [FAO] 1998). Al- though not exclusively located in developed countries, neither do the arrangements of these banks reflect the same spatiality as the origins of the materials they contain. Next, attention turns to the top five countries for international patent filings in 2005: the United States, Japan, Germany, France and the United Kingdom (with the United States accounting for 33.6 percent of all international patent filings and 34.6 percent coming from the countries party to the European Patent Convention) ( Recharger Magazine 2006). In doing this, we find a noticeable "clumping" taking place within distinctly developed countries. This is not surprising given the concentrations of capital and technology in these nations; con- centrations that make it possible to rearrange, manipulate, and replicate nature in ways that are not (yet?) possible in countries where the foundational materials were discovered. Granted, com- pensatory arrangements, as earlier described, are set up to mitigate for this point. Through such arrangements, source countries are to be supplied with infrastructure, training, and technology so they too will eventually be able to create patentable innovations. Yet, as also previously described, those already in possession of these forms of capital are increasingly able to remove themselves from any obligations to compensate source countries. Which leads one to ask: Will less developed countries ever be able to catch up?

#### **The development of internationally harmonized biotech patent law reproduces dependencies and inequalities.**

Carolan 7 (Michael S. Carolan, "Mapping Biotechnology: From Epistemic Artifacts to Geographies of Control”, https://www.jstor.org/stable/43304100, Autumn 2007, Accessed 6-26-2022)//ILake-SG

The goal of this article has been to map key epistemological and ontological terrains associated with biotechnology. I begin by com- paring the scientific representations of today, particularly as found in the genomic sciences, with those of the past. In doing this, we find that these representations have changed over the centuries, which has been of significant consequence in shaping today's global political economy. In the following section, the socio-politi- cal effects of these representations are discussed, particularly in terms of how they give shape to global path dependencies. Here, specific attention is given to the redistributive effects (in terms of reifying the dominant political economy) of Western patent law and its internationalization. By the article's end, we find the supposedly spaceless bioeco- nomy of endlessly reproducible genetic "code" to be in fact a fiction. The reproduction of intellectual property rights on the global scale has resulted in the further reification of existing path depend- encies and inequalities, which in part gives lie to the term "global- ization." By examining the epistemologica! and ontological assumptions that give shape to the global distribution of informa- tional and biological resources, this article seeks to add another layer of depth to our understanding of today's dominant political economy and the geographies of control it helps to create and so-lidify.

## K – Cybernetics

### 1NC – Biotechnical Cybernetics K

#### Pressure to harness maximized cognitive efficiency hacks bodies and subjectivities for monopolized ‘digital authoritarianism’---this masks the technopolitical agenda of the algorithmic academy under the façade of revolutionary accelerationism to omit alternative modes of humanitarian thought

Peters 20 (Michael A. Peters | Professor of Faculty of Education at Beijing Normal university and Emeritus Professor at University of Illinois | “A Map of Technopolitics: Deep Convergence, Platform Ontologies, and Cognitive Efficiency” | https://doi.org/10.1177/0725513620928812 | DOA: 6/26/2022 | SAoki)

---AT: Technopess

---AT: No Subjectivity

The supreme value of cognitive efficiency requires that we **participate** and **labour** **endlessly**, that we give away our data free, and that we integrate ourselves into the soon-tobe one trillion dollar data monopolies of **surveillance capitalism**, a form of **‘digital authoritarianism’**. The ‘dataism’ that creates new ‘platform ontologies’ now threatens the **tracking** and **hacking of the body**.1 The US National Science Foundation has been working on the notion of technological convergence for over a decade (Bainbridge and Roco, 2006, 2016; Roco and Bainbridge, 2002; Roco, 2017a, 2017b). The ‘new paradigm’ is seen to consist in a deep and progressive convergence of ‘nano-bio-info-cogno’ **(NBIC) tech**nologies that signals a revolutionary, harmonious, **accelerating**, and the greater integration of science at the nano-level that will **drive** the **next wave of** the **knowledge economy** as a **generative innovation system**. The final link in the configuration is the least epistemologically mature of the ‘**cogno’ tech**nologies that have recently been generously funded through the establishment of five neurocognitive research centres focusing on the **overrid**ing **value of cognitive efficiency**. This is the **last stage** in the new science revolution that will **harness ‘bio-info-cogno’ tech**nologies at the nano-level to deliver a form of ‘**bioinformationalism’** (Peters, 2012) of the body that can be programmed and reprogrammed. ‘Platform ontologies’ refer to technologies that record the massively large collection of signals that a signed-in user gives away as free data during the course of their relationship with the likes of Google and Facebook, and also increasingly to a rapidly growing raft of algorithmically-driven apps that tune us for better health, fitness, motivation, and mood prediction and enhancement: ‘The algorithm knows us better than we know ourselves.’ **Tracking and hacking the body through new onto-platforms redefines our subjectivity**. When we surrender, we do so of our own ‘free wills’. **We can no longer be optimistic** about the new age of data or ‘dataism’ (Harari, 2017, 2018) or, indeed, of the deep technological convergence and integration into a single planetary data processing system. Both dataism and convergent technologies have long proved their susceptibility to control, to manipulation, to closet data science, and to nefarious use by Cambridge Analytica, Facebook and Google. This is a **map of the technopolitics** and also the future battleground of the **algorithmic academy** in which **philosophy** and the **critical humanities are dying**.

#### Vote neg for rejection---rejection is not just a ‘say-no,’ rather a speculative, metaphysical disinvestment in bioinfomatic epistemologies that shifts to the dialectical intersection of postdigital cybernetics---utilizing critical pedagogies within the emerging system effectively channels political telos to alter the technopolitical paradigm of algorithmic, surveillance capitalism

Peters 20 (Michael A. Peters | Professor of Faculty of Education at Beijing Normal university and Emeritus Professor at University of Illinois | “A Map of Technopolitics: Deep Convergence, Platform Ontologies, and Cognitive Efficiency” | https://doi.org/10.1177/0725513620928812 | DOA: 6/26/2022 | SAoki)

The development of the new biology has in large measure been possible through the application of informatics to biology, more recently, of the new biology to informatics, using data-intensive – so-called ‘big data’ – to develop a ‘evo-devo’ program that integrates biological theory across the hierarchy of life. This involves the development of a **dialectic** of information and biology (‘**bioinformatics’**) as a scientific logic and rationality that leads to the biologization of the digital (in the long term) and an informatization of biology. It follows developments in late capitalism after ‘**informationalism’** (Castells), ‘**academic capitalism’** (Slaughter), ‘cognitive’ (Boutang), ‘finance’ and ‘financialization’, ‘**algorithmic’** (high frequency trading), and now ‘bio-cognitive capitalism’. **Genomic capitalism** represents a phase of global **biocapitalism** that, when harnessed with a new generation of information processing, itself organically enhanced, comprises a ‘**bio-informationalism’** that expresses a new kind of **utopian perfectionism** about the possibilities for a **new age of genetic self-renewing capitalism that is capable of programming itself** (Peters, 2012: 99). In a Thesis Eleven paper (Peters, 2012), I tried to articulate a notion of ‘bioinformational capitalism’ that builds on the literatures on ‘biocapitalism’ and ‘informationalism’ (or ‘informational capitalism’) in order to articulate an emergent form of capitalism that is self-renewing in the sense that it can change and renew the material basis for life and capital as well as program itself. Bioinformational capitalism applies and develops aspects of the new biology to informatics to create new organic forms of computing and self-reproducing memory that in turn has become the basis of bioinformatics. The paper begins with a review of the successes of the ‘new biology’, focusing on Craig Venter’s digitizing of biology and, the creation of new life from the digital universe. In examining the claims of synthetic biology (Dyson, 2007) writes: It has become part of the accepted wisdom to say that the twentieth century was the century of physics and the twenty-first century will be the century of biology. Two facts about the coming century are agreed on by almost everyone. Biology is now bigger than physics, as measured by the size of budgets, by the size of the workforce, or by the output of major discoveries; and biology is likely to remain the biggest part of science through the twentyfirst century. Biology is also more important than physics, as measured by its economic consequences, by its ethical implications, or by its effects on human welfare. Other critics suggest that we have entered the digital age of synthetic biology where biotechnology and advanced computer information systems are converging. In this age we can design gene sequences, slice and edit them, and ‘insert them into the DNA of a developing organism, resulting in life that had not naturally evolved in the global ecosystem’ (Berube, 2016: 428). As Williamson argues: ‘postdigital’ hybrids of biological and informational codes, novel neurotechnologies combine neuroscience insights into the human brain with advanced technical development in brain imaging, brain-computer interfaces, neurofeedback platforms, brain stimulation and other neuroenhancement applications. (Williamson, 2018) He suggests that: **Merging neurobiological knowledge** about human life **with computational tech**nologies, **neurotech**nology exemplifies how **postdigital science** will play a significant role in societies and education in decades to come. (Williamson, 2018) We can broaden this perspective to talk about the confluence and convergence of informationalism and biology at the nano-level. In ‘Critical Philosophy of the Postdigital’ (Peters and Besley, 2018) we argue: Quantum computing is based on quantum mechanics and offers a radically different approach from classical computing based on classical mechanics. **Cybernetics**, and complexity theory, provide insight into systems that are too complex to predict their future. Artificial Intelligence and deep learning are promising the final stage of automation which is not compatible with the welfare state based on full employment. **We have** thus **arrived** into the **age of algorithmic capitalism**, and its current phase, ‘**biologization of digital reason’**, is a distinct phenomenon that is at an early emergent form that springs from the application of digital reason to biology and the biologization of digital processes. **Rejecting a fully mechanical universe**, therefore, a critical pedagogy of the postdigital is closely related to Whitehead’s process philosophy, which is a form of **speculative metaphysics** that privileges the **event and processes over and above substance**. A **critical philosophy of the postdigital is dialectically interrelated with** the theories such as **cybernetics and complexity theory**, and also processes such as quantum computing, complexity science, and deep learning. These **processes** **constitute the emerging technoscience global system, perpetuate (algorithmic) capitalism, and offer an opportunity for techno-political change.**

## K – Heidegger

### 1NC – Heidegger K

#### The incorporation and use of neuroweapons systems datafies the minds of IHL experts and subjects, cementing calculation as the dominant paradigm.

**Noll 14** (Gregor Noll, "Weaponising neurotechnology: international humanitarian law and the loss of language", OUP Academic, https://academic.oup.com/lril/article/2/2/201/944587, 9-4-2014, Accessed 7-5-2022)//ILake-SG

Let me, then, ask the same question once more: what would be lost if we were to adopt a neuroweapons system incorporating IHL software along the lines I have described above? The use of a neuroweapons system incorporating IHL software would constitute a reduction: the legal knowledge of the IHL experts would be reduced to a set of skills regarding a particular procedure to be followed in decision-making and a range of outcomes. As these skills and this range of outcomes are taken as a baseline for programming, they are uncoupled from processes of verbalisation, discussion with peers and other forms of knowledge production. The complexity of a mind expressing itself through human language, and minds communicating with each other, are reduced to neuronal and synaptic processes, which are scripted in a particular technical language. In this reduction, human experts provide themselves as raw material for armament production. This is captured well in Martin Heidegger’s reflections on what sets modern technology apart from the technology of pre-industrial farming or craftsmanship. In his 1953 text on ‘The Question Concerning Technology’, Heidegger suggests that it is the river, which is built into the hydroelectric power station, rather than the power station being built into the river.56 He captures this relationship as one of challenging (Herausforderung, also translatable into ‘asking to give up something’ or into ‘provocation’).57 The decisive difference between a pre-industrial windmill and the power station is that only the latter is designed to store energy, whereas the former is at the mercy of the weather. A power station provokes the river to offer up its energy, to then secure it in a system of storage, which makes it steerable at will. In all this, man is no longer at the mercy of the weather. For Heidegger, these are the main traits of contemporary industrial technology: to challenge or provoke (herausfordern) that which nature holds, with the purpose to steer (steuern) and secure (sichern) the energy derived from it at will.58 The same three traits apply to the hypothetical IHL software I described above. The single IHL assumes a role analogous to the single windmill, but the software accumulates the knowledge of a whole group of experts for steady use. These experts are provoked by combat simulations to impart something that can be stored, steered and secured. The work done to resolve an application problem of IHL in that simulation is transformed into measurements of neuronal and synaptic activities, to then be re-transformed into the code of a computer programme. From there, it is further transformed into a machine-made decision whether or not to attack a material target. As a consequence, humans may be harmed, or not, buildings may be destroyed, or not. Securing the operation of a weapons system through the energy or information imparted by the experts is, however, only an intermediary aspect of this process. In the end, it secures a particular way of waging war, underwritten by a particular form of knowledge production. This knowledge, in turn, is conceived as the ultimate form of knowledge available to humans. It unfolds a particular form of normativity, which affects IHL. I will revert to this in a moment. In comparing the windmill to the power station, Heidegger sets apart pre-modern from modern technology. Yet it is striking how careful he is to avoid passing judgment on either form. ‘The Question of Technology’ is antithetic to nostalgia.59 Heidegger’s point is to present technology as a mode of revealing truth.60 From this point onward, he develops the idea that modern technology reveals through challenging and provoking (Herausfordern). The way modern technology relates to truth, we come to understand, is no different from the way it relates to a river, to coal, or to the wind. Modern technology works in two directions. It brings about changes in the material world as much as it produces a particular understanding of what it means to be in the world at all. Neither of these changes takes place without the involvement of humans. It is actually decisive for modern technology to address human beings so that they adopt a challenging, or provocative mode of revealing the world.61 The essence of technology is, as Heidegger emphasises, nothing technical.62 If we accept this, we may also accept that modern technology made the advent of modern science in the 17th century possible. In this understanding, modern technology as a form of challenging and provoking emerged ontologically and historically prior to the 18th century breakthrough of engineering.63 The human being is no outsider to this form of revealing. On the contrary, she assumes a central role, walking the path designated by it, being challenged by it in a way prior to, and more original, than the coal, the water or the wind, and revealing herself in the process. For more than three centuries, the technological mode of revealing has grown from a rather particular metaphysical choice into ubiquitous technological presence. The advent of neuroweapons is perhaps its most conspicuous example so far, but the way it intervenes into the very process of human perception and cognition differs, in degree, but not in kind. The growth of modern science into an unquestionable and naturalised paradigm yields a kind of enchantment. This I felt together with fellow patients when we saw Leif walk unaided. This was sensed by my audiences; anxious about, yet trustful in the metaphysical groundedness of science. In its light or dark form, it remains a dangerous sentiment. Yet the perception of things as ordered by the apparatus of neuroweapons is not as such more or less natural than any other ordering of perception. It is here that Heidegger takes us further than analytical philosophers criticising degenerate forms of Cartesianism64 or cognitive scientists subscribing to the embodiment thesis65 would do. He does so, because his account for technology is part of a fundamental critique of any form of Cartesianism. In Heidegger’s thought, all entities can be experienced in two different modes. One is presence-at-hand (Vorhandenheit), referring to objects present in consciousness, e.g. when we think about them. Another is readiness-at-hand (Zurhandenheit), referring to equipment ‘that remains concealed from view insofar as it functions effectively’.66 For Heidegger, we relate to the world and the entities in it as ‘equipment’, and not as subjects encountering objects. When we encounter an entity as equipment, we relate to it as being for a particular task.67 When we encounter an entity through the sights of a weapon, we encounter it as being for the task of winning a war (regardless of whether we open fire on it or not). Why is this so different from Descartes’ world where a subject encounters an object? The Cartesian way is to make out context-independent objects, to only then add context-dependent meanings to them. These objects are present-at-hand, and at considerable distance from their uses and relations. Heidegger’s preferred encounter with entities is through the mode of readiness-at-hand, in which entities already come laden with contextual meaning. This meaning—the entity’s being itself—can only be partially experienced as an emergent meaning. Here is the famous Heidegger quote in which he exemplifies the being revealed by readiness-at-hand through the example of a hammer: The less we just stare at the hammer-thing, and the more we seize hold of it and use it, the more primordial does our relationship to it become, and the more unveiledly is it encountered as that which it is—as equipment. The hammering itself uncovers the specific ‘manipulability’ of the hammer. The kind of Being which equipment possesses—in which it manifests itself in its own right—we call ‘readiness-to-hand’.68 As I noted earlier, we relate to anything in the world as equipment, so there is no particular class of things that are equipment in the more traditional sense of tools. Once we keep this in mind, it becomes clear that revelation of what a thing is hinges on our preparedness to immerse ourselves into using it, that is, into its readiness-at-hand. Only then can we reveal that which is concealed in them (denoted by Heidegger with the Greek term lethe) and let it come forward as truth (aletheia, the Greek term for truth or that which is no longer concealed).69 What difference does this all make to neuroweapons? I now understand that the neuroscience going into neuroweapons systems is Cartesian in that it isolates neural signals in the human brains as completely decontextualised objects. These neural signals are isolated from the fact that they are observed for a particular purpose (in the end, for winning a war). Only after making them present-at-hand as isolated objects, are they endowed with context. It is exactly this Cartesian lack of context that makes them appear as such a solid foundation for any normativity. We risk believing that this presence-at-hand, this objectivity of the entities is nature itself in purity. So when such neural signals appear, we are prepared, by an unreflexive Cartesian habit, to ascribe this appearance a truth-value in isolation from the context for which they are used. When a particular neural signal appears in the analysis of a video feed of a theatre of war, we are then a priori prepared to ascribe this appearance truth-value as to the existence of a target. Here is the normative effect of Cartesianism. With its reduction of reality to a presence-at-hand, it ‘sets up one privileged entity as the explanation for all others’.70 Neural signals in the human brain are that privileged entity in our case, and the explanation of what is a target flow from it. With Heidegger’s distinction in mind, I may trace how Cartesian ontology effects the hierarchy of academic disciplines as well. To the extent that this ontology posits presence-at-hand as ideal, the sciences will always appear as more normative than other disciplines. Presence-at-hand with its subject–object constellation can be staged much more convincingly in science than in law, social sciences or humanities. Medicine rests on the study of the human body as part of nature, and it is the nature of its natural science that is so well suited as an object maximally distant from all subjectivity. This adds further weight to the normativity I outlined above. I think that the appeal of the law and neuroscience field may be partially explained by the desire of legal researchers to render the most judgmental elements of their discipline more Cartesian. So neurotechnology in weapons systems participates in a particular normativity that is founded on a particular Cartesian ontology. Its workings are very likely to be unconscious to those engaged in the development of these weapons systems and technologies, and, indeed, to many of those criticising them. I have set out with the question what would be lost with the introduction of neuroweapons, and I have arrived at an answer that focuses upon what is added when using these weapons, and why it matters. This addition comes at the price of a loss: it is the loss of language. Language is lost because neuroweapons shift the focus from a conversation amongst combatants on the existence and legitimacy of a target, or, indeed, even an inner dialogue on these matters within one combatant to an exchange of neural signals and its interpretation by the machine. Of course, in developing that machine, humans speak and use language in an exchange on its future uses. The latter use of language is clinically separated from the context of the battlefield experience. Why would the reduced role for spoken language affect the application of IHL? Applying IHL in the battlefield is to make judgments: distinguishing civilians from combatants, determining when a combatant is hors de combat or making a proportionality judgment in targeting. The rules set out in IHL predetermine these judgments only partially. And these judgments need to be justified in language ex post. Historically, with the advent of international criminal law, we have probably never verbalised the laws of war as much as now. To the extent that applied IHL cannot be expressed in the script of computer programmes, it would be doomed to trail the normative primacy of neuroscientific modes of warfare. It is no coincidence that militaries arrange for a standing conversation on IHL between a legal advisor (or judge advocate general) and the commander. Because it is impossible to express the two cardinal principles of distinction and proportionality as a script,71 contemporary IHL is critically dependent on language as a carrier of judgement. The more neuroweapons are used, the less IHL will be applied in a conflict. There is a second and related argument for the importance of language. Heidegger allots the human a privileged role in revealing things. Presently, this revealing takes place in the challenging mode so characteristic for technology. Yet there is another form of revealing in which language has a privileged role. In his 1950 essay on language (‘Die Sprache’),72 Heidegger distinguishes between a standard view of language as a medium for humans to express themselves, and his own view, in which language itself speaks (‘Die Sprache spricht’).73 Where language does not speak in this particular way, we are left with everyday platitudes or the residuum of information brought about by technology (which may then be broken down into its constituent elements and made computable in a software). Yet when we are attentive to the speaking of language itself, we may hear the peal of silence (‘das Geläut der Stille’).74 This mode of revealing is not one which challenges, but which lets emerge.75 While Heidegger draws on poems to exemplify this revelatory addition to the constituents of language, he makes it clear that this particular type of revelation is necessary for truth to appear. Language and the role of the human in the world are closely related to each other. In combination, they are indispensable for the appearance of truth, if only in a conversation between a legal adviser and a commander.

#### The impact is a global techno-totalitarianism that will bring about extinction

Resta, 21—professor of Theoretical Philosophy at the University of Messina (Caterina, “The Age of the Totalitarian Domination of Technology,” Heidegger and Contemporary Philosophy: Technology, Living, Society & Science, Chapter 1, pg 17-18, dml)

While the collapse of “ideological” totalitarianism marks the definitive defeat of the idea of a political government capable of guiding total mobilization that stems from a political ideology, we can limit ourselves to observing that in our present, in the age of the technological-economic globalization of the world, where the veil of ideologies has definitively fallen, the will to power can now be expressed in all its destructive violence, through technology, which directly takes command. Technology that, as has now become evident, assumes the task of imposing its total dominion directly over the entire globe, finally free from any ethical-political-legal or ideological restraints. This concerns the devastation of the environment, as well as the economy, in the age of financial capitalism, bio-technologies and Artificial Intelligence. While ideological totalitarianism was based on a frightening personal constraint, one that was implemented through terror and propaganda, the new techno-totalitarianism pursues its aim of consumption and of wearing down the totality of beings, through an all-pervasive control of all the spheres of existence. It however uses much more seductive and persuasive systems, such as to induce the masses, by now completely depoliticized, to consent “spontaneously”, even joyfully, to the loss of their most basic freedom, and live with relief from responsibility and decisions which, in turn, are becoming increasingly anonymous and impersonal and, precisely for this reason, also inscrutable. Totalitarianism, in its extreme form of post-ideological technological nihilism, can finally become a “normal condition” for the historical humanity of our time. The era of total global technological domination, therefore, not only marks the end of philosophy, but also the end of politics – as Heidegger understood–, which is forced to serve the techno-economic interests that nowadays impose their dominion directly without opposition and without intermediaries, particularly through the technical and economic command of computation. Politics now only serves as propaganda and apologetics: as a mere ‘persuasive’ cover and collector of consensus for increasingly obscure technical-economic interests. For its part, technology is never neutral, since it is already constitutively pre-disposed, as will to power, to a violent politics of power and robbery, which will be all the more effective, the more it pursues objectives and interests that are not extrinsic to it. The new Lords of the Earth will be the Lords of Technology, those able to put themselves at the service of this planetary, totalitarian power, which will then launch its final attack on both the Earth, sacking and devastating it, along with its inhabitants. The animal rationale is transformed into the technologized animal, while the being-at-work names the new truth that the era of technology reveals, also “fixing” the essence of man: “The laboring animal [das arbeitende Tier] is left to the giddy whirl of its products so that it may tear itself to pieces and annihilate itself in empty nothingness”.46 What characterizes homo technicus above all else is therefore self-annihilation, a sinister propensity to self-destruction. Technology, insofar as it is a challenge [Herausforderung], requires from nature its resources, in the mode of ordering [Bestellung], as a standing-reserve [Bestand]. Ordering [Be-stellen] is done by computation, by virtue of which the earth is commanded to present [dar-stellen] itself. This mandatory ‘presentation’ forces the earth to make itself available for our unlimited exploitation. This is why Heidegger would call the non-technological essence of technology Ge-stell, in the sense of the meeting [Versammlung] of the different ways of placing [stellen], through which man requests and provokes the real. The fact that the real now presents itself as a standing reserve [Bestand] involves the transformation of beings from objects to reserves of materials and energies that are available to us, usable, and ready for use and consumption. Technology is this imperious command that violently attacks the earth in its totality, for the sole purpose of enhancing its power, and therefore is completely indifferent to the catastrophic and destructive outcomes of its devastating work. All this does not concern the fate of a people or a continent alone: as already Jünger had noted, in addition to its total nature, technology also has a planetary nature – today we would say global – that goes beyond geo-historical boundaries, unifying the earth in a single, universal language. While technological power unveiled its destructive character in the wars of matériel [Materialkriege] of the first half of the twentieth century, then conversely the violence of an unconditional will to power has become the truth of technology, even in peacetime.

#### **The spiral into technological improvement and self-augmentation inevitably results in technological immortality – vote Neg to endorse Being with the Human Body and Death.**

**Blades 3** (David Blades, "The Pedagogy of Technological Replacement", https://www.jstor.org/stable/42978067, JSTOR, May 2003, Accessed 7-6-2022)//ILake-SG

In a way, notes the Historian, citizenship was becoming moot since in the decades that followed, the boundary separating humans from analogous mechanical technology became blurred. In the early sixties more and more humans were electing to replace body parts with durable synthetics. This led to a brief cyborg movement, a loose social development where some individuals proclaimed the superiority of their synthetic and bio-engineered combinations over "normal" humans and even androids. The prosthetics fashion mania that swept the wealthy nations in the late sixties briefly stimulated the development of cyborgs, but by the mid-seventies the technical ability to place the entire consciousness of a human into a new, mechanically equivalent body totally immune from disease led most people to choose the android alternative; very few cyborg combinations existed by 2080. Over the next two decades the term "android" came to be used both for those machines of artificial intelligence and those with similar bodies containing the analogues of human consciousness. Finally, during the first two decades of the twenty-second century the two types of androids completely merged, forming the android Collective. Those that held to their organic existence due to nostalgia, religious beliefs, or poverty began the curious process of dying in the last decade of the twenty-first century, either from old age or during the Great Plague of '98-'99. The rest of humanity, safe from the failings of flesh, entered the twenty- second century pondering their immortality. The Pedagogy of Replacement The end of the Historian's work degenerates into scattered reports of a few major historical events, such as the dissolution of national entities and the Collective's declaration in 2099 at the dedication of the new Museum of Creation that it would take care of the remaining organic humans. It is clear the Historian had lost interest in the narrative before dying, except for the sudden flurry of writing comprising the final pages. These begin with a comment that strikes the caregiver as almost sacrilegious: It's OK to die. According to the discussion that follows, the Historian was reacting to a comment made at the start of the twenty-first century in a keynote address at a teachers' convention: We are in danger as a species of inventing ourselves to death. We have at the most one or two generations to gain public control over the direction of technological change. The children about to start school next year, our little ones - certainly their children - will face a radically different world than humanity has ever known. Indeed, these changes have already begun and the time is short in beginning the public discussions and action needed to direct the evolution of our technology. (Blades, 2001, p. 1) While this educator was right about the extent of the changes that would take place in the twenty-first century, the history of events revealed a key flaw in the educator's thinking: The danger to humanity was not in the possibility of inventing to death, but in the act of inventing away from death. The android is deeply disturbed by this point and the argument that follows. Android ontology was formed on the assumption that androids re-present humanity; in fact, androids are humanity in an evolved form. The Historian seemed to be developing a counter argument that the act of cheating death through technology essentially robbed humanity of its Being. Once again, the Historian turns to Heidegger, this time the philosopher's sketch in Being and Time (1962a) of the existential- ontological structure of death in relation to "Dasein" - the existential and ontological possibilities of Being. Heidegger begins his discussion of death by reminding readers that "death is a possibility-of-Being which Dasein itself has to take over in every case" (p. 294). This is clearly true since death is the possibility of no longer Being-in-the-world. In other words, understanding what it means to live in the world begins by confronting the possibility of death. According to Heidegger humans are thrown into this position: Every organic human has to face the real event of death. Thus far the android has little argument. But Heidegger takes this obvious point much further. After discussing inauthentic responses to death, he suggests Being- towards-death can be seen as " Being towards a possibility - indeed, towards a distinctive possibility of Dasein itself' (p. 305). He explains that this possibility arises by "waiting for that actualization" (p. 306); that is, the anticipation of this actual event "turns out to be the possibility of understanding one's ownmost and uttermost potentiality-for- Being - that is to say, the possibility of authentic existence" (p. 307). So claimed by death, one becomes liberated from one's lostness in those possibilities which may accidentally thrust themselves upon one; and one is liberated in such a way that for the first time one can authentically understand and choose among the factical possibilities lying ahead, (p. 308) The android puts down the Historian's notes, shaken. Heidegger is making a radical suggestion: Rather than something to overcome, the authentic anticipation of death leads to freedom from being lost, revealing the possibility that is life itself. Authentic Being-in-the-world requires death; the ontology of humanness begins, argues Heidegger, with the "impassioned freedom towards death" (p. 311). And, realizes the android, this essential anticipation is not logically possible if you are immortal. What does the technological replacement of humanity teach? In White Noise , DeLillo (1985) points out the importance of death in understanding life: I think it's a mistake to lose one's sense of death, even one's fear of death. Isn't death the boundary we need? Doesn't it give a precious texture to life, a sense of definition? You have to ask yourself whether anything you do in this life would have beauty and meaning without the knowledge you carry of a final line, a border or limit, (pp. 228-229) The Historian expands on this point, citing the experience of the character Fosca in Simone de Beauvoir' s novel All Men Are Mortal (1946/1995). Frustrated by the death and decay he faces daily, Fosca chooses to drink from a potion that guarantees immortality. But through this character, de Beauvoir shows that immortality is a terrible curse. Living forever eventually leads to a bland experience of boring predictability. Fosca explains: It was a fine morning, but the peasants, bent over the land, did not look at the sky. As for me, I was weary of seeing it day in and day out for two hundred years, always the same.... Endlessly! Will I never awake in another world where even the air will taste different? (pp. 138-139) Before drinking the potion Fosca neglected to consider the consequence immortality might have for relationships. As his friends and companions grow old his retention of the same age separates him from the essential normal human experience of aging. In response to his proposal of marriage and in full knowledge of his immortality, Beatrice responds, "You're not a man... .You're a corpse" (p. 153). But even a corpse has future, returning through decay to the fabric of the natural world; Fosc is even denied this possibility. Eventually he comes to realize that as an immortal he is a man from nowhere, without a past, without a future, without a present. I wanted nothing; I was no one. My hands were forever empty: an outsider, a dead man. They were men, they were alive. I was not one of them. I had nothing to hope for. (p. 400) In the end, Fosca finds immortality to be "a terrible curse. I'm alive and yet I'm lifeless. I shall never die and I have no future. I am no one. I've no past and no face" (p. 29). Fosca shows us, suggests the Historian, that by achieving immortality through technology humanity moved away from the very sequences of time that defined being human. These sequences are linked to a much larger pattern of life over billions of years. In her novel about a family that by accident became immortal, Babbitt (1975) uses a conversation between the mortal Winnie and the immortal Tuck to explain how living involves being part of a larger pattern. When Winnie tells Tuck that she does not want to die, Tuck replies, Not now. Your time's not now. But dying's part of the wheel, right there next to being bom. You can't pick out the pieces you like and leave the rest. Being part of the whole thing, that's the blessing. But it's passing us by, us Tucks. Living's heavy work, but off to one side, the way we are, it's useless, too. It don't make sense. If I knowed how to climb back on the wheel, I'd do it in a minute. You can't have living without dying. So you can't call it living, what we got. We just are, we just be, like rocks beside the road. (pp. 63-64) Like rocks beside the road - the android ponders these words - and then: Am I alive? Stretching out an arm, the caregiver adopts a critical stance. Is this arm, so much like the Historian's arm in shape and function, actually an arm, or just an artifact, part of an interconnected collection of parts that amounts to no more than a sophisticated "rock on the road"?

### 2NC – Framework

#### An academic discussion of technological innovation and Being within the context of Heideggerian logics creates Rebellion, allowing us to ask questions with meaning.

**Blades 3** (David Blades, "The Pedagogy of Technological Replacement", https://www.jstor.org/stable/42978067, JSTOR, May 2003, Accessed 7-6-2022)//ILake-SG

The caregiver turns to the remaining points with anticipation. The number four is written beside one word: "Rebellion." A circle has been drawn around this word with a line leading to the next page. The last page is a mess of notes and references, but numbers continue to guide the android. The page begins with a quote from educational philosopher Maxine Greene: "In the classroom opened to possibility and at once concerned with inquiry, critiques must be developed that uncover what masquerade as neutral frameworks" (Greene, 1988, p. 134). This critique begins, suggests Greene, when teachers and students "learn to love the questions" (p. 134). Beside this quote the Historian writes, in large letters, "ASK WHY" and a large number five. The android bristles a bit at this, since questions that ask why are regularly used among androids for systematic diagnosis. As for general speculation, however, the question seems so impractical and pointless. Anticipating this response, the Historian argues that it is fundamentally human to ask ontological questions arising from the question why. As Heidegger (1962b) points out, to ask why is to make "a daring attempt to fathom this unfathomable question by disclosing what it summons us to ask, to push our questioning to the very end" (p. 221). Questions open the possibility of challenge to the social structures that bind and define us, but Heidegger also points out that the questions brought forth by asking why are sources of revelation about the human condition. Questions are thus crucial to the survival of humanness. Androids may inherit the ability to ask why, but the question shifts in meaning and purpose when death is not part of the equation and individuality is absent. When every part is replaceable and consciousness is linked to a Collective, asking why as an individual is meaningless. The corporate existence of androids robs them of the ability to ask with any meaning the questions that naturally rise from the human experience. For this reason, argues the Historian, every school should have embraced curriculum of questioning since through questions children could more deeply understand their situation and Being. In their seduction by the superficial, however, schools historically avoided the deep questions that can be brought forth by asking why. Instead, notes the Historian, schools in the late twentieth century and early twenty-first century encouraged students to leap to the sanctioned right answer, effectively policed by a testing mania that seemed to grip public education. This call to the correct answer considerably narrowed the vision of what else might be, limited what other questions might be posed, and failed to explore what opportunities might exist. As a technology of answers, the system failed most woefully by not teaching children to pose the difficult questions. What was needed, argues the Historian, was a system-wide rebellion initiated by brave teachers who encouraged children to ask questions, including questions about the nature, direction, and role of technological innovations. Drawing from several leading twentieth century critics of technology (Ellwood, 1996; Mander, 1991; Postman, 1993), the Historian had sketched out several questions children, along with teachers and adult mentors, might learn to ask in order to uncover the political and social issues presented by existing and emerging technologies, such as: Does the technology 1. provide benefits for the majority or a few? 2. promote social and economic justice? 3 . influence the protection of fundamental human and civil liberties, including the rights of minorities? 4. respect cultural diversity? What will be the quality of interactions with this technology across a variety of cultures? 5 . allow a reasonable balance between time alone and time interacting with others? 6. humanize living? Help people act with kindness and resp others? 7. respect the natural world? Favor conservation or waste? 8. have social effects that can never be reversed?

### 2NC – Links – Security Cooperation

#### Securitization is a pursuit of certainty that can only be accomplished through the constant surveillance of all resources, human and otherwise, as well as the valuation of all subjects.

Mitchell ‘5 (Andrew J. Mitchell, “Heidegger and Terrorism,” Brill, https://www.jstor.org/stable/24721821, 2005, Accessed 7-6-21)//ILake-SG

IV. Security for Sure There can be no security. If being is what threatens then security as the absence of terror would be the absence of being. But the absence of being is precisely the threat. Obviously, security is just a be found in the absence of danger as it is in the consummation of the danger, total annihilation. Instead, security is to be found within the danger and threat of being. But how? Heidegger likewise provides us endangered ones with a way of thinking security and preservation. This is his fourth contribution to a thinking of terrorism. Security and assurance, both equally apt translations of the German Sicherung, are indissociable from certainty (Gewißheit) for Heid the course of the 1968 seminar in Le Thor, Heidegger provides a brief history of this relation between security and certainty: "the quest for certainty appears first in the domain of faith, as the search for the certainty of salvation (Luther), then in the domain of physics as the search for the mathematical certainty of nature (Galileo)" Heidegger unites these two concerns for certainty within a single concept: assurance (Sicherung), "In the quest for mathematical certainty what is sought is the assurance of man in nature, in the sensible, in the quest for the certainty of salvation, what is sought is the assurance of man in the supra-sensible world" (KS, 30/14).22 Certainty is in the service of assurance or security and is only the epistemological aspect of a greater ontological condition of security. Security is freedom from uncertainty in all of its forms, sensible, super-sensible, and ontological. Salvation and the mathematical certainty of nature are themselves to be understood as instances of an ontological assurance again uncertainty. Ontological uncertainty would be found in conceptions of singularity, where the uniqueness of a thing renders it irreplaceable and thus opens us to the possibility of loss, or in conceptions of alterity, where the other is not anticipated and confined in advance to the structures of categorical thought. Uncertainty in this eliminated in security. One is securely insulated against these differences of the world. For modern thought, the securing of representations for representational thinking provided the backdrop for the arrival of uncertainty (see GA 7: 82; EP, 98). Modern metaphysics itself, according to Heidegger, "means the securing of the human being by itself and for itself" (GA 67: 167). Such a policy must be abandoned becomes more and more a piece of the standing-reserve like everything else. This postmodern security is accomplished through the bestowal and appraisal of value, "Securement, as the obtaining of security, is a grounding in valuation" (GA 5: 262/195; tm). What is valued can be replaced by something of equal value, and this fact lies at the center of our conception of security today. Securement, as a giving of value, assures us against loss by making the world replaceable. In this respect, security is nothing other than to imagined as a world of total availability, imagined as a world of utter transparency where all resources, human and otherwise, are constantly surveilled and traced through their paths of circulation. The transformation in being coincident modern warfare likewise puts an end to modern politics and establishes in its place an impersonal commitment to the furthering of the planned replacement. Security is only possible when everything works according to these plans, and this requires "leaders," whose true function now becomes evident. For the plan, "the necessity of ‘leadership,’ that is, the planned calculation of the securing of the whole of beings, is required" [GA 7: 89 90/EP, 105; tm). The demand for security is always a call for such Führers.

### 2NC – Links – Ontology

#### The aff’s ontological explanation of the world is tyrannical and essentialist, pervasively datafying Subjects and Beings by explaining them as objectively measured mechanistic relations.

**Aho 9** (Kevin A. Aho, "Heidegger’s neglect of the body", OUP Academic https://libgen.is/book/index.php?md5=EA8BB406E5143D32B7F5CEB653143C8E, 2009, Accessed 7-5-2022)//ILake-SG

Heidegger contends that the history of Western philosophy, beginning with Plato and Aristotle, has failed to carry out the proper task of thinking. Philosophy has occupied itself only with beings. It has, therefore, failed to ask the “question of being,” a question that asks how and why beings show up as they do. One of the fundamental goals of Heidegger’s project, in this regard, is to dismantle a core assumption in the Western philosophical tradition, an assumption that Jacques Derrida will later call the “metaphysics of presence”2 and Dorothea Frede will call “substance ontology.”3 The history of metaphysics, as Heidegger puts it, is the treatment of the meaning of being as parousia or ousia, which signifi es in ontologico-Temporal terms, “presence” (Anwesenheit). Entities are grasped in their being as “presence,” that is to say, they are understood with regard to a defi nite mode of time—the “Present” (Gegenwart). (BT, 47) Based on this view, the being of anything that exists, including humans, must be understood in terms of enduring presence, a presence that is constant or remains the same through any change in properties. The metaphysical tradition, therefore, understands the being of beings as “substance,” referring to the basic, underlying “what-ness” that is unchangeable and essential to all beings as beings.4 In short, metaphysics is a type of refl ection that is “concerned with the essence of what is” (AWP, 115). Throughout Western history, this metaphysical assumption prevailed, where substance has been interpreted in different epochs in terms of eidos (Plato), energeia (Aristotle), ens creatum by God (Christendom), res cogitans/res extensa (Descartes), and, today, as a material resource, a “standing reserve” (Bestand) that can be mastered and controlled by calculative reason (OWA, 201). As an area of philosophical inquiry, Heidegger sees nothing inherently wrong with metaphysics. The problem is that the metaphysical worldview has become so dominant that it “drives out every other possibility of revealing” (QCT, 27). Consequently, the metaphysical worldview becomes absolute; it fails to recognize that it is merely one of many possible interpretations of the world. Although metaphysics is the prevailing historical interpretation, it has become tyrannical in the modern age, preventing any other possible horizon of disclosure. According to Heidegger, this concealment of other modes of disclosure is a “double-concealment.” First, metaphysics forces all things to be contained within a substance-oriented worldview. Second, metaphysics offers itself as the only possible worldview. As a conse- quence, beings reveal themselves only in terms of substance, and this orientation culminates in the technological age, where our relation with the world has become purely instrumental, where beings show up exclusively as resources at our disposal. But the expansion of the metaphysical worldview does not end with the Cartesian paradigm of man as subject mastering and controlling objects in the world. Man too is sucked into the vast system of objects via the totalizing effects of modern technology. Heidegger asks, “Does not man himself belong even more originally than nature within the standing reserve?” The answer is yes, as a “human resource” (QCT, 18). Dismantling Cartesian Metaphysics Heidegger’s diagnosis of the oblivion of being helps us understand his motivation for overcoming the subject/object metaphysics that “pervades all the problems of modern philosophy” (BP, 124). For Heidegger, this requires engaging the thought of René Descartes, the progenitor of this bifurcated worldview. Descartes’s project was to systematically doubt the veracity of every thought and every commonsense experience in order to ground science on a foundation of absolute certainty. This method of radical doubt establishes the res cogitans as indubitable. The free, thinking “subject” becomes the self-enclosed first ground from which “objects” of experience can be observed. From this standpoint, the external world comes to be understood as a system of causally determined parts. Beings are no longer experienced in terms of historically embedded social meanings and values but in terms of brute, mechanistic causal relations that can be objectively researched, measured, and predicted based on scientific principles.

### 2NC – AT: Perm

#### **The aff’s planmaking, centered around the motive of securitization, is fundamentally mutually exclusive from the neg’s model of Being, in that it results in the inevitable datification of subjects into models.**

Mitchell ‘5 (Andrew J. Mitchell, “Heidegger and Terrorism,” Brill, https://www.jstor.org/stable/24721821, 2005, Accessed 7-6-21)//ILake-SG

Planning is a matter of ensuring the smooth and "frictionless” circulation of resources along channels and pipelines of order and delivery. The plan's success is assured from the outset, because beings are now in essence [plannable]. The mathematical tracking stock and supplies becomes a total tracking when things have become completely available. Nothing is concealed from this taking of inventory, with the effect that the mathematical model of the thing is no different than the thing itself. The mathematical modeling of things, an operation that Heidegger traces back to Ockham and the nominalist split between the word and thing (see VS, 30—31/13— 14), is paradigmatic for the disappearance of identifiably discrete beings under the rule of technology. The model is no longer a representation of what is modeled, but in a paradoxical manner, the thing itself. Nothing beyond the thing’s mathematical model is recognized. Everything essential to the thing is contained in the model, without remainder. Such is the truth of the standing-reserve; it is a collapse of the distances that made possible representation. Without that spacing, there is only the suffocating rush of the standing-reserve along the circuitry of the plan. The plan makes manifest the self-willing nature of technology, in that the plan has no purpose other than to assure its own and increase. For the plan to function, it is therefore necessary that beings be consumed and their replacements follow right upon them. The plan plans for consumption, outlining the paths and channels that the standing-reserve will occupy in its compelled obedience to order. The world wars have pointed towards this end, according to Heidegger, for "They press toward a securing of resources [Bestandsicherun] for a constant form of consumption" (GA 7: 88; EP, 103-4; tm). This consumption is synonymous with replacement, since there is nothing lost in consumption that is not immediately replaced. The plan is to protect itself from loss by completely insulating itself from uncertainty. The plan seeks "the 'all-inclusive' [restlose] securing of the ordering of the order" (GA 7: 92; EP, 107; tm). Order is only secured when there is nothing that resists it, nothing that remains in "disorder." Any remainder would stand outside of the prevailing order, as would any difference, in complete disorder. There is another Nietzschean intimation in this, as Heidegger reads the will to power as a drive to secure and order all chaos. Without remainder (restlose), without rest, the standing-reserve threatens to encompass everything in a monotonous, swirling sameness. The more secure the world becomes, the greater is the abandonment of being as it is further enframed within the plan.

#### Heidegger indicates that one must create one’s own interpretation of law and Being in order to achieve autonomy – the aff forgoes this with state law.

**Harries 76** (Karsten Harries, "Heidegger as a Political Thinker”, The Review of Metaphysics, a Philisophical Quarterly, https://www.jstor.org/stable/20126848, 1976, Accessed 7-7-2022)//ILake-SG

What are the political implications of Heidegger's analysis of authenticity and resolve? Richard Schmitt is not the only one to suggest that Heidegger's emphasis on self-possession surely "would incline him toward an anarchism like that of Henry David Thoreau, who proclaims, That government is best which governs least.' "18 In support of this suggestion one can point to a remark made by Count Yorck von Wartenburg, and quoted with apparent approval in Being and Time: "To dissolve elemental public opinion, and, as far as possible, to make possible the moulding of individuality in seeing and looking, would be a pedagogical task for the state. Then, instead of a so-called public conscience – instead of this radical externalization? individual conscience – that is to say consciences – would again be come powerful." (SZ 403) Schmitt cites one of Heidegger's own statements, adding the comment that Where all authority is suspect and feared as a temptation for the individual to give over his responsibility for choosing genuine self- possession, one is not surprised to read that "Resoluteness constitutes the fidelity of existence to its own self. As resoluteness which is ready for dread, fidelity is at the same time respect for the only authority that existing freely can have." (SZ 391)19 Unfortunately Schmitt does not quote the second sentence in its entirety and as a result misinterprets what is being asserted: according to Heidegger resolve must root itself in the inherited past.20 This past, given the fact that man exists essentially with others, is not only the individual's own, but determines the destiny of a people. (SZ 384) "Dasein's fateful destiny in and with its 'generation' goes to make up the full authentic historizing of Dasein." (SZ 385) Heidegger's understanding of destiny rules out all attempts to draw anarchistic consequences from Being and Time.21 Once we recognize that authenticity demands the subordination of the individual to a common destiny, it becomes impossible to see the Rektoratsrede as diametrically opposed to Being and Time. Consider the following passage from the address which Schmitt finds particularly difficult to reconcile with what is said in Being and Time: The highly touted "academic freedom" is being banished from the German university: being merely negative, this freedom was spurious. It meant indifference, arbitrariness of goals and inclinations, actions without restraint. (SU 15)22 Heidegger precedes this sentence with the Kantian sounding "To give the law to oneself is highest freedom." Freedom is understood as autonomy; autonomy requires obedience to a law which the individual draws from his own essence and thus gives himself. But in what sense does Heidegger's understanding of the essence of man enable us to give content to such a law? Kant could appeal to the authority of pure reason. But if Heidegger's analysis is accepted, that authority is no longer available. To give some content to the notion of autonomy Heidegger draws on history: to understand what his own essence commands, the individual has to understand also the origin of that essence and the destiny which ties him to others, to his people (Volk). (SZ 384, SU 15) This much we can get from Being and Time. New and all too timely is the emphasis which the Rektoratsrede places on leader ship. Heidegger strikes this theme with the very first sentence: the assumption of the rectorate is the acceptance of the duty to provide the university with spiritual leadership. (SU 5) And since the university should not only be the school which trains "the leaders and guardians of the fate of the German people" (SU 7, 18), but itself a place of "spiritual legislation," (SU 21), this leadership cannot be confined to the academic sphere, but should have an impact on the entire nation. The disintegration of the old order, the collapse of an already ruined culture, which threatens to sweep everything into confusion and madness (SU 22), gives particular urgency to this task. Heidegger's description of the students of 1933 underscores this urgency: Germany's students are "on the march," but this march still lacks direction. This makes it into a search for those leaders, who through "word and work" would reveal to these students their vocation. (SU 14)

## K – Orientalism

### 1NC – Orientalism Links

#### Invocations of securitied rhetoric in biowarfare is part of a larger techno-Orientalist anxiety fueled by US competitiveness with China in the global tech race---Yellow Peril becomes reconfigured through this imaginary and manifests in domestic anti-Asian sentiments in the name of technological and national security

Siu and Chun 20 (Lok Siu and Claire Chun | “Yellow Peril and Techno-orientalism in the Time of Covid-19: Racialized Contagion, Scientific Espionage, and Techno-Economic Warfare” | DOI: 10.1353/jaas.2020.0033 | SAoki)

Make no mistake, as long as President Trump continues to take a confrontational stance, using the rhetoric of blame against China with the intention to punish it with new sanctions, tariffs, and even the cancellation of U.S. debt obligations,5 the racial aggressions against Asian Americans will continue to rise, if not intensify. By now, it is widely accepted that the novel coronavirus emerged first in Wuhan, and scientists believe that the zoonotic disease might have jumped from animals to humans at Wuhan’s Huanan Seafood Wholesale Market, a wet market where vegetables, seafood, meat, and a small number of exotic wildlife were sold. Despite this, on April 30, President Trump casually offered a new theory, which Secretary of State Mike Pompeo tweeted: that COVID had originated in the Wuhan Institute of Virology, which houses a biosafety level-4 lab, and that the virus might have “leaked” from that lab. The implicit suggestion is that China had either intentionally bioengineered the novel coronavirus to cause massive destruction, thereby attributing malice, or carelessly leaked the virus due to scientific negligence, thereby attributing incompetence. In either case, these kinds of unsubstantiated speculations work to further stoke anger and disdain against the Chinese state. More disturbingly, they traffic in the idea of China as a biotechnology threat, resonating The immediate and unqualified responses from the scientific community reveal the danger of these potentially incendiary speculations. Responding swiftly, the Office of the Director of National Intelligence issued a press release the morning of April 30 stating that “The Intelligence Community . . . concurs with the wide scientific consensus that the COVID-19 virus was not manmade or genetically modified . . . ” (my emphasis).6 Within days, the director of the National Institute of Allergy and Infectious Disease, Dr. Anthony Fauci, attested that the virus “could not have been artificially or deliberately manipulated.”7 These assertions sought to extinguish any attribution of malice to the Chinese state. Even with firm contestation, however, the very invocation of the idea of biotechnology warfare has tapped into and perhaps even fueled our existing techno-Orientalist anxieties. As the COVID pandemic story transpires in real time, engulfing the entire global community, taking unexpected twists and turns, making divergences and transgressions, we have become increasingly aware that the layers of entanglements cannot be easily parsed out, nor will we know anytime soon how and when the story will end. We offer a query into how we might assess and make sense of the intensifying Sinophobia and xenophobia in this current context. To do so, we must resist the temptation to confine our analysis to the narrow parameters of the pandemic. Rather, we insist on examining the rise of anti-Asian aggression within the concomitant vectors of the pandemic, the escalation of the U.S.-China trade war, and the growing concerns about cyber- and techno-security. Here we assert that the ideology of yellow peril set within a techno-Orientalist imaginary is powerfully animating the racial form and racial affect mediating the multiple terrains of public health, technology, global trade, and national security. While it is tempting to treat this historical conjuncture as extraordinary, it is crucial that we situate the current unfolding within the long history of Asian racialization, one that indexes the abiding tension between the political impetus to define national belonging and the shifting economic imperatives of the nation-state.8 In this essay, we examine the techniques and effects of race-making in this current moment, while linking them to historical antecedents, in order to illustrate the persistence of the yellow peril ideology as it is being configured through a techno-Orientalist imaginary where China is posited as the chief enemy-threat. What follows is an analysis of how Chinese alterity as national security threat is being simultaneously constructed and disciplined in the different but related arenas of the pandemic, science, and technology.

#### Discussion of new emerging tech in STS shows that race is NOT just biological, but has recentered toward a posthuman conversation of socio-genetic discussion---specifically in biotech, this racial configuration brings new forms of biological orientalism to fruition that aggregates Asian Americans into racialized stereotypes of dehumanization

Min 16 (Susette Min | “Biopower, Space, and Race in Asian American Studies” | DOI: 10.1215/00029831-3711150 | SAoki)

---STS = science and technology studies

Like Zhou’s and Anderson’s monographs, which group Asian American texts and cultural productions around a particular theme, Lee’s book can be approached as an analysis of Asian American literature and performance art within the framework of biopolitics and the idea of the fragmented Asian American body. But Lee’s book is much more ambitious, an epistemological reassessment of Asian American studies that attempts to graft recent scholarship in gender theory, queer theory, and science and technology studies (STS) onto Asian American critical thought to break the static thinking of the field’s pursuit of social justice and understanding of agency. In a framework where race is understood as a historically variable construct with material effects, the term Asian American has been foregrounded as a necessary “fictional (discursive) construct,” one that constantly threatens to be interpreted as essentialist and biological (8). Pointing to the field’s renewed anxiety about essentialism, Lee reviews the different ways scholars such as Kandice Chuh and Colleen Lye have called for “more rigorously historicist, formalist, [and] aesthetic” interrogations (10). While not taking issue with these endeavors, Lee questions the implications of avoiding a discussion of the ways scientific discourse on race has moved to the genetic and cellular level, and has cleaved from the biological. This disconnect, she argues, forecloses a number of opportunities to advance social justice agendas: the ability to see the persistence of particular forms of biological racism, the emergence of new racial forms, and the apparent equivalence of living matter “in an abstract system of underlying exchangeability” (233). In a manner analogous to Asian American studies’ deployment of qualified personification, STS deploys discursive strategies that conjure narratives about fictional persons in order to return the part (of the body) to the whole—for example, conflating cell lines with persons and turning them into proxies for personhood. Lee highlights how recent scholarship in STS traces the historicity of biology and exposes the ways biotechnology has reconfigured biology as a factory in correspondence with an intensified commodification of organs and tissues from surplus populations, separating human biological persons from partial persons. She pushes Asian American scholarship to consider these new forms of racial profiling and rearticulated divisions between nature and culture, human and posthuman. In other words, the meaning of race has changed within the discourse of biology, but Lee contends that these shifts have neither displaced nor supplanted a chromatic schema of race. Instead, biotechnology’s separation of human biological persons from partial persons and its anthropomorphizing of cells performatively intensify the aggregation and disaggregation of Asian Americans into revised racial classification systems. This emerges, for instance, in the case of Greg Bear’s biothriller Blood Music (1985), whose plot includes racializing and reinforcing Orientalist stereotypes of Asian Americans as superhuman, indifferent to feeling and suffering, and biologically impossible

## K – Queer Theory

### 1NC – Queer Theory Links

#### The epistemology of modern biotech follows a cybernetic militarization that naturalizes institutional stereotypes of the nuclear family that eradicates queer scholarship as an ‘abnormality’

Preciado 18 (Paul B. Preciado | Paul B. Preciado, is a writer, philosopher and curator whose work focuses on applied and theoretical topics relating to identity, gender, pornography, architecture and sexuality | *Counter-sexual Manifesto* pg 37-38 | SAoki)

The sophistication found in most branches of therapeutic and cybernetic medicine (xenotransplants, cybernetic visual and auditory prostheses) contrasts sharply with the underdevelopment of organ- modifying technologies (phalloplasty, vaginoplasty, etc.) and sexual practices (take, for example, the scant evolution of the condom in the past two thousand years). Modern biotechnology’s goal is the stabilization of the heteronormative categories of sex and gender (a project that spans from the eradication of sexual and body abnormalities, considered monstrosities at or before birth, to operations in the case of transsexuals). Testosterone, for example, is the biosocial metaphor that permits the passage of a body designated as feminine to a body designated as masculine. It is imperative to consider sexual hormones biopolitical drugs, the access to which cannot be safeguarded by heteronormative state institutions. Article 9 The control and regulation of time are crucial for the design and improvement of countersexual practices. Countersexual society decrees that countersexual activities shall be considered a social labor as well as the right and obligation of all bodies (or speaking subjects) and that these activities shall be regularly practiced daily for a specified number of hours, to be determined as fits the circumstance. Article 10 Countersexual society demands the destitution of the nuclear family as a production, reproduction, and consumption unit as well as planet- destruction unit. Sexual practice in pairs (that is to say, in distinct groups of more than one but fewer than three individuals of distinct sex) is conditioned by the heterocentric system’s reproductive and economic purposes. The qualitative (straight) and quantitative (two) sexual normalization of corporal relationships shall be systematically subverted thanks to countersexual reversal practices and individual and group practices, which shall be taught and promoted by means of freely distributed countersexual images and texts (counterpornographic culture). Article 11 Countersexual society shall establish the principles of a countersexual architecture. The conception and creation of countersexual spaces shall be based on the deconstruction and renegotiation of the border between the public and private spheres. This task implies the deconstruction of the house as a private space of heterocentric production and reproduction. Article 12 Countersexual society promotes the destitution of traditional educational institutions and the development of a high- tech countersexual pedagogy in order to maximize the erotic relationship between living bodies as well as diversifying and improving countersexual practices. Countersexual society favors the development of knowledge– pleasure; it favors the development of technologies aimed at a radical transformation of bodies and an interruption of human history as the naturalization of oppression (the naturalization of class, race, sex, gender, disability, species, etc.).